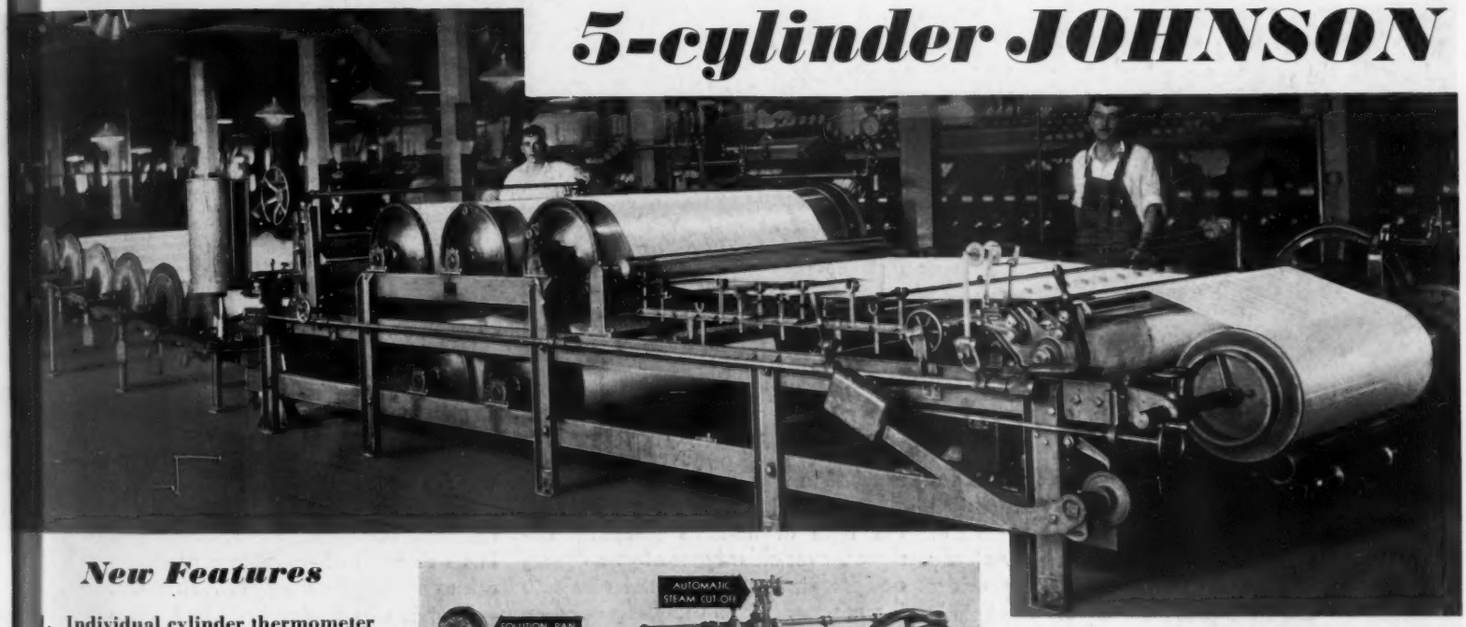
MODERNIZATION AND MAINTENANCE NUMBER
FEBRUARY, 1935

COTTON

Serving the
TEXTILE INDUSTRIES

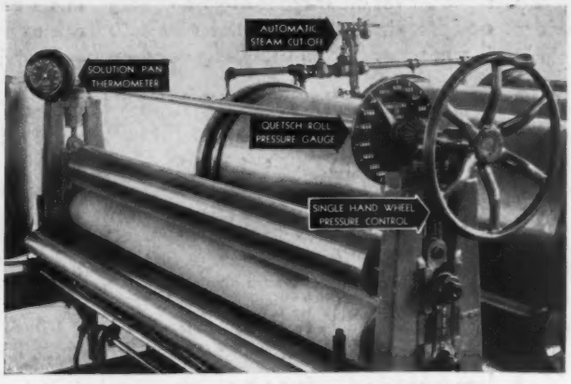
LIBRARY OF CONGRESS
MAR - 5 1935

CONDITION YOUR WARPS while SIZING ▲ *on the NEW 5-cylinder JOHNSON*



New Features

1. Individual cylinder thermometer and temperature controls. Automatic steam cut-off. Size pan solution thermometer.
2. Super-drying capacity permits sizing warps at high speed and low temperature.
3. Stretch positively controlled by quick-change gear box, synchronizing operation of quetsch "feed" with speed of drying cylinders.
4. S-L-O-W speed and reverse motions.
5. Quetsch pressure gauge. Tachometer for indicating yards per minute.



Some new features of the new Johnson Sizer

More than 7 times as much rayon is sized on "Johnsons" as on all other rayon sizers in the world combined.

To get better weaving rayon and acetate warps and finer finished fabrics, you must properly condition your warps during sizing. The yarn must come off the machine with the right moisture content.

Many mills, in the effort to maintain production with old fashioned single-drum or with 3-cylinder machines, employ excessive drying temperatures. Unknowingly they reduce the residual moisture of their warps to only ½ to ⅓ what it should be.

Brittleness, an increase in static electricity, and other difficulties result.

The proper moisture content can only be maintained by having sufficient drying surface to permit drying at low temperatures. Because of its large drying capacity and individual cylinder temperature controls, the New Johnson permits production sizing at safe temperatures. The correct moisture content is retained. Uniform drying is assured. Warps are properly conditioned, weaving is improved and seconds reduced.

●

Write for free descriptive folder of the new Johnson.

CHARLES B. JOHNSON

PIERCY and HOLSMAN STS., PATERSON, NEW JERSEY

Representatives UNIVERSAL WINDING CO. Manchester, England
CAROLINA SPECIALTY CO. Charlotte, N. C.
JOSEPH BARNES New Bedford, Mass.

ACHIEVEMENT
IS BORN OF
EXPERIENCE

IF YOU WANT THE FORMER, YOU MUST SEEK THE LATTER

Michael Angelo completed his famous ceiling decorations in the Sistine Chapel, Rome, in only 22 months of actual work on the ceiling. Actually however it was 24 years of previous EXPERIENCE, involving incessant study and labor on other projects, that gave immortality to these paintings.

Franklin Process to-day dyes yarns in the package form with difficult shades in record time, at reasonable prices, and with seeming ease. However, were it not for a quarter century of EXPERIENCE in package dyeing, what now seems easy might well prove an unsuccessful and costly experiment for all concerned.

Good package dyeing requires much more than just package dyeing machines. Admitting the superiority of this type of machine (properly designed) over older types of yarn dyeing equipment, it still does not eliminate the need of human knowledge and ingenuity in the preparation and application of the dye bath by the package method. Furthermore the ONLY way in which much of the necessary knowledge can be gained is by EXPERIENCE.

That is why to-day Franklin Process can successfully do certain classes of work which in the past were considered unsuited to package dyeing. That is why Franklin Process dyeing, on all classes of work where it is used, has steadily improved until it is unsurpassed, and in some cases even unequalled, in quality.

Dont judge Franklin Process Custom Yarn Dyeing by your acquaintance with it 25, 10 or even 3 years ago. See what it can do for you TO-DAY. ✓ ✓ ✓

Custom Yarn Dyeing

Natural Yarns Colored Yarns

Glazed Yarns

Dyeing and Processing Machines

THE COLORED YARNS IN THIS FABRIC ARE FRANKLIN PROCESS DYED FASTNESS TO WASHING AND LIGHT GUARANTEED UNEXCELLED

When you pay for colors of KNOWN fastness, advertise the fact. Use the Franklin Process Fast Color Label. Ask us about it.

FRANKLIN PROCESS

ESTABLISHED 1910

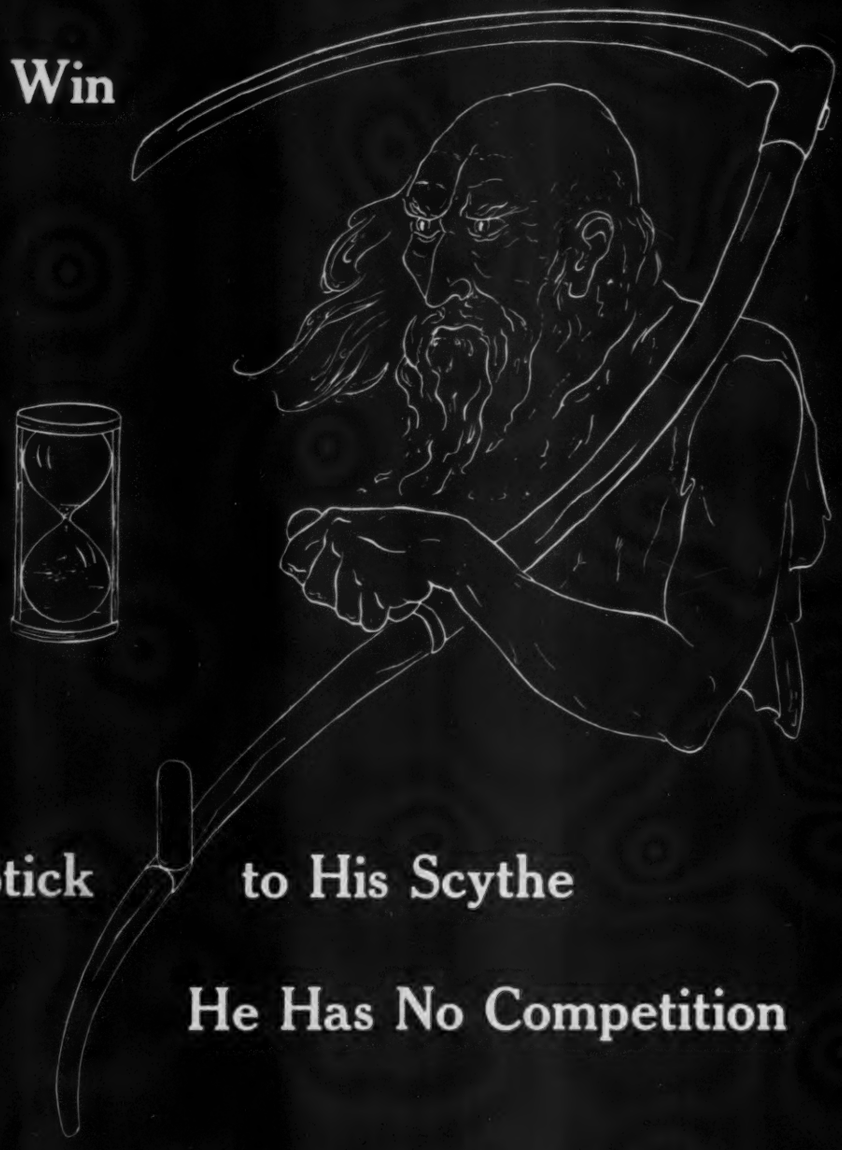
Pioneers in Package Dyeing

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

The Only Stand-Patter

Who Can Win



The Grim Reaper

May Stick to His Scythe

He Has No Competition

But Playing the Waiting Game of Standing Pat
With Out-of-Date Machinery Will Not
Keep the Wheels Turning in Textile Mills

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

These *lubricants*

work in cotton mills all over the world

Texaco *tested* Lubricants for Cotton Mills are carefully refinery tested for quality and uniformity. They are service tested for their lubricating ability under all types of operation.

In the production and transmission of power, Texaco *tested* Lubricants have developed an unusual efficiency in eliminating loss. In carding machines, combers, spindles, cylinders and shafts, they will stand up to whatever speed your schedule demands. They do their job cleanly, without throwing oil.

These three factors—saving power, faster machine operation, reduction of spoilage—have proved to cotton mills all over the world that Texaco *tested* Lubricants are vital factors in achieving maximum production at minimum operating expense.

A talk with a Texaco representative will show you how these tested and proved products will enable you to produce your own yardage at less cost and find larger net profits in every yard turned out.

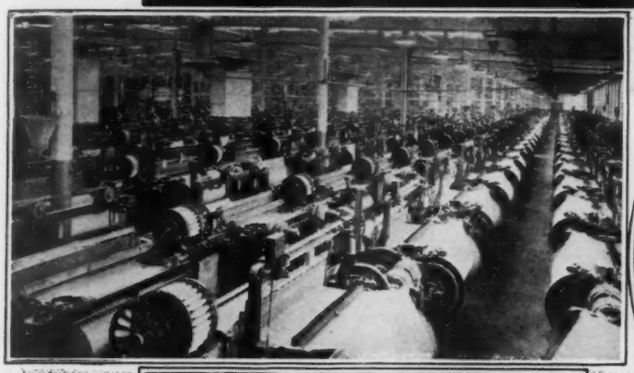
THE TEXAS COMPANY
135 East 42nd Street, New York City
Nation-wide distribution facilities assure prompt delivery.

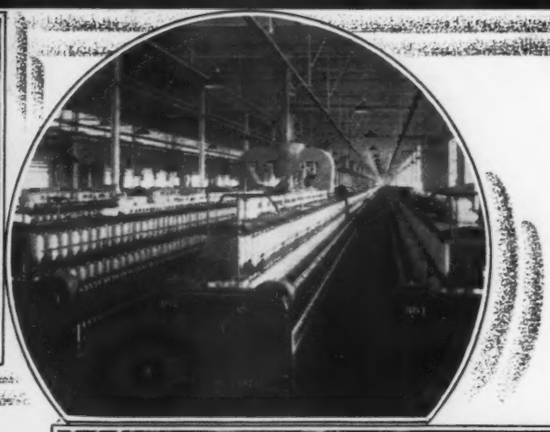
TEXACO

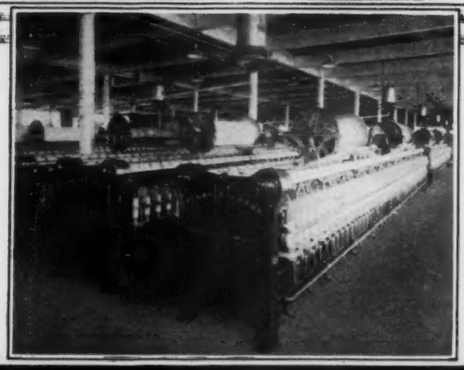
TEXACO *tested* LUBRICANTS

REFINERY TESTED FOR UNIFORMITY • • • SERVICE TESTED FOR ECONOMY

MODERNIZATION







A *Paying* INVESTMENT

Never have conditions so completely justified proper expenditures for a comprehensive modernization program in every department of a mill. Relocation and better grouping of machinery sometimes materially increases production and reduces operating costs. Replacing obsolete machinery always pays good dividends.

Many Textile executives are choosing TODAY as the time to carefully plan for the future and make every department earn its proper dividend. Such a program makes strenuous competition a healthy stimulus instead of liquidation.

Our organization with a staff of experienced engineers — textile, mechanical, electrical, construction and civil — is prepared to take your problems, study each aspect and work out a comprehensive program for competitive efficiency.

We will be glad to study this problem with you . . . preliminary consultation is entirely without obligation.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

Card Room BOBBINS

That speed up production

There are no "misfits" in the line of U S card room bobbins—made from selected stock, scientifically dried, finished smooth inside and out by a specially developed process for assuring moisture-resistance—made to standard measurements or your own specifications.

Ask for samples for testing purposes—we know that a test will convince you that U S quality means everything in accuracy and long life. The U S sales-engineer at our nearest office is at your service.

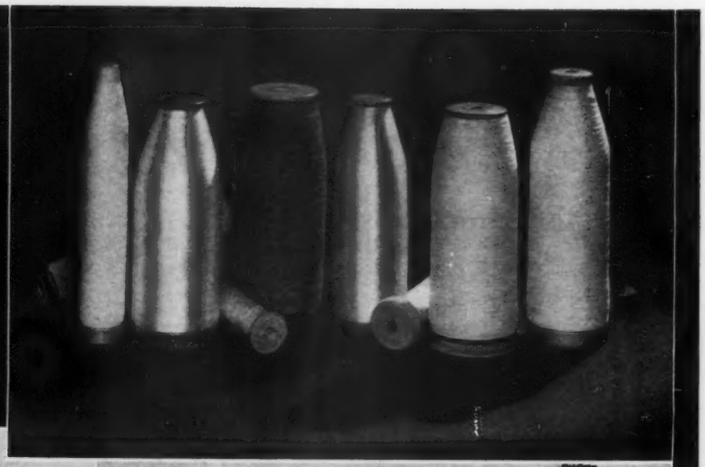
OTHER OFFICES:
Providence, R. I.
Lawrence, Mass.
Philadelphia, Pa.
Monticello, Ga.
Charlotte, N. C.
Greenville, S. C.
Johnson City, Tenn.

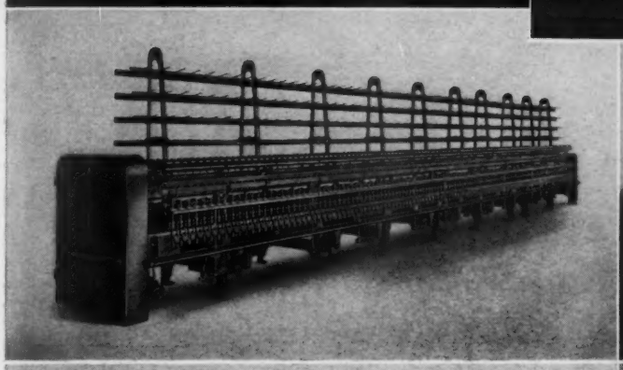
U S BOBBIN & SHUTTLE COMPANY
Manchester, New Hampshire

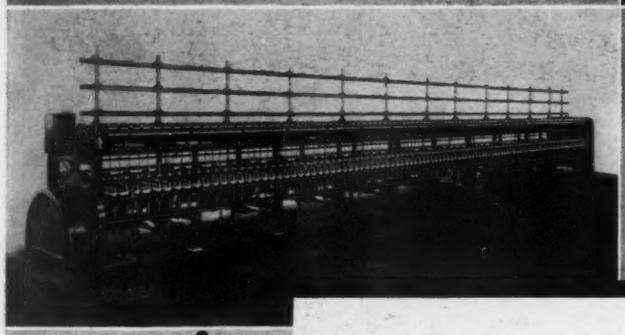
BETTER BOBBINS • SPOOLS • CONES • SHUTTLES

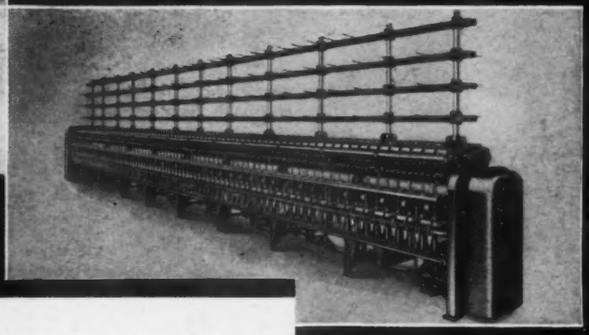
HIGH SPEED TWISTERS

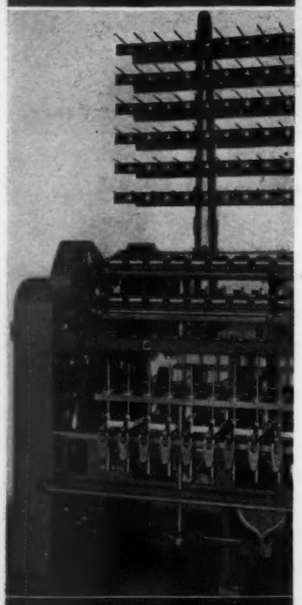
for • COTTON
• WORSTED
• RAYON
and SILK

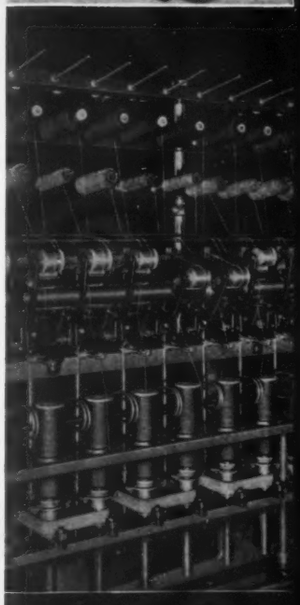












● Good textile machinery is something more than fabrication of steel and iron . .

● Any draftsman's pen can copy the outlines other minds have formulated into a successful product. But back of the machine is experience and sympathetic contact with mill problems by a trained personnel, which cannot be imitated. . . .

● The success of WHITIN machinery is due, in large part, to a constant pressure to keep abreast in research, development, engineering and manufacturing. . . . .

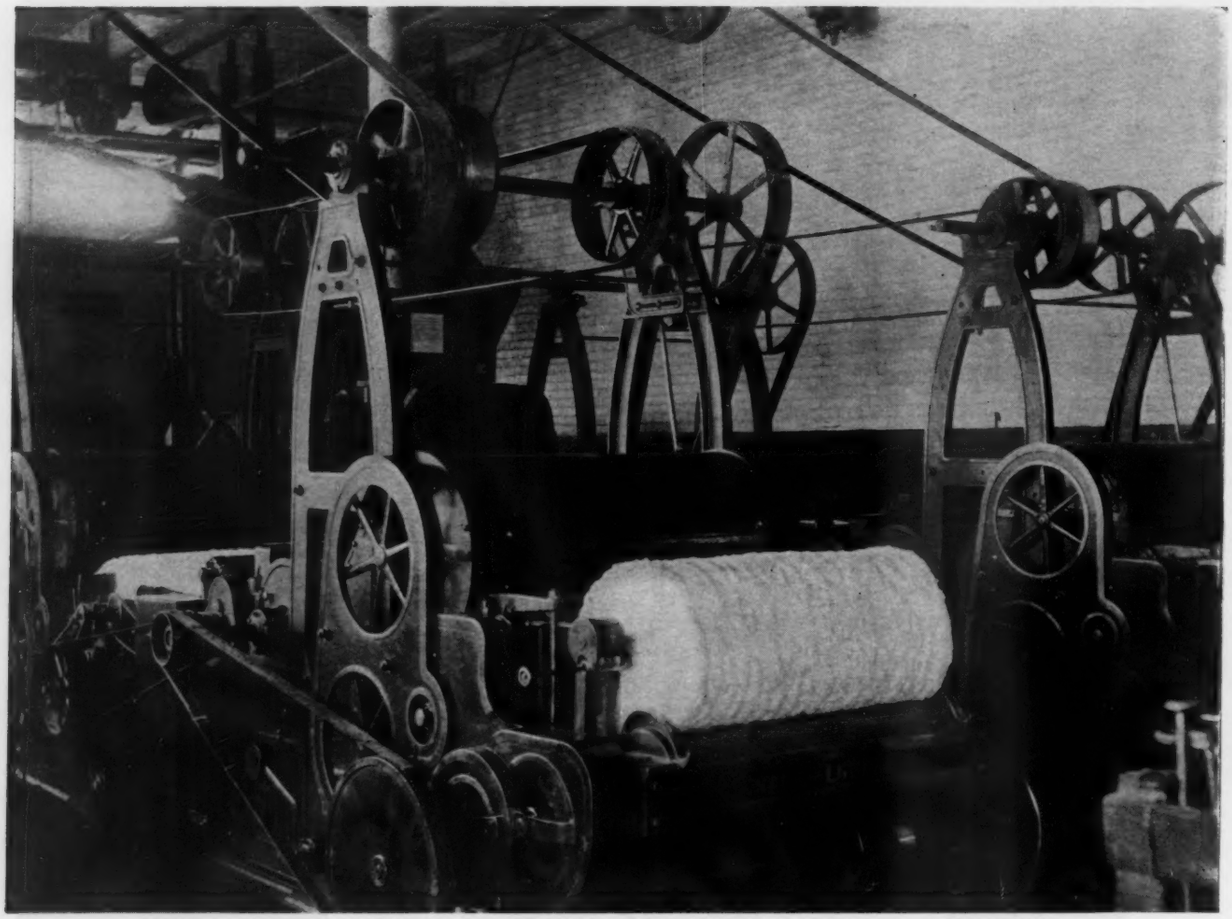
● That is another reason why mills turn to WHITIN when equipment needs arise.

WHITIN

Charlotte WHITINSVILLE Atlanta

Modernize your Picker Room with

Aldrich Synchronized Single Process Picking



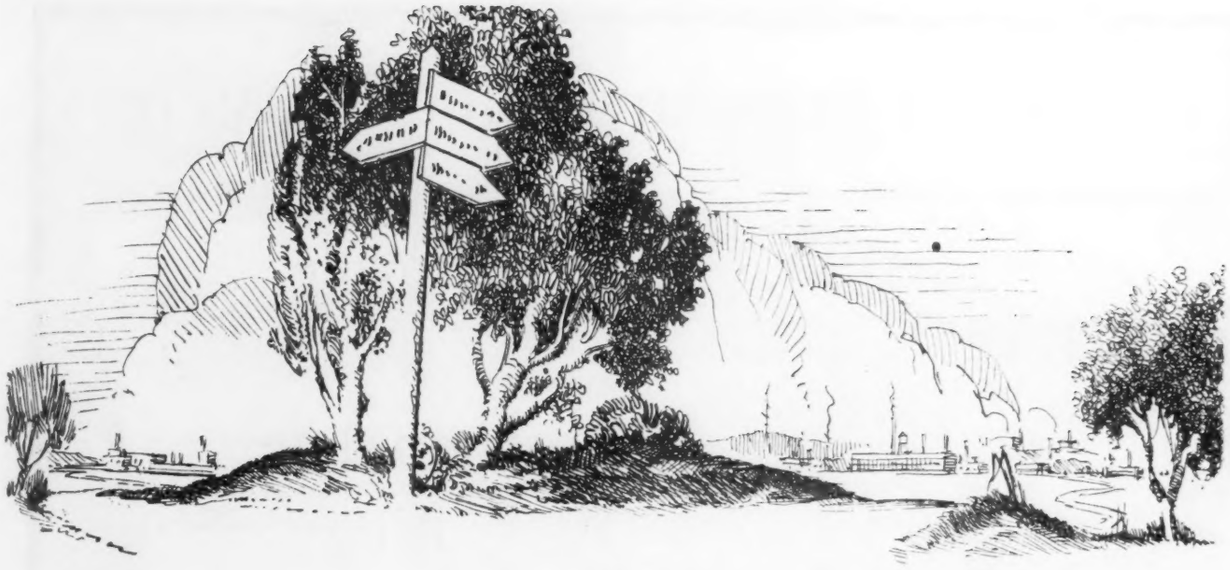
The most widely used single process picking system in the Textile Industry.

Simple—Inexpensive—Efficient—

Made and Installed by

AldricH MachinE

Greenwood, WorkS South Carolina

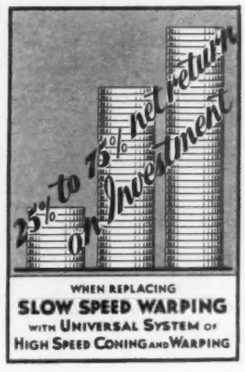


THE ROAD MARKED "three out of four"

IF all the textile mills in this country now doing slow speed warping were to investigate the cost of high speed warping—3 out of 4 would find themselves on the road to a greater net return by investing in the Universal System of High Speed Coning and Warping. The 25 to 75% net return possible with the Universal System, is, in 75% of the cases, greater than any other system can offer.

Lowest investment—lowest depreciation cost. The Universal System has the lowest investment of any warping system. This is why you have, ***throughout the life of the Universal machine,*** a depreciation cost so low that any other savings that might be had from a machine of higher investment could not prove profitable.

No reciprocating guides. In addition to these savings, the Universal System has a low maintenance cost due to simple construction and the use of the rotary traverse which takes the place of all reciprocating guides.


25% to 75% net return on investment
WHEN REPLACING
SLOW SPEED WARPING
WITH UNIVERSAL SYSTEM OF
HIGH SPEED CONING AND WARPING

Results. In one mill recently, the Universal System offered 67% yearly return; in another mill, the return was 26½%; in still another, 58%. This means that these mills will get a ***quicker*** return of the investment and their manufacturing costs will always be lower due to the lower depreciation and maintenance charges, as well as to other savings.

How about your mill? It costs nothing to find out whether or not your mill is one of those on the road marked "three out of four". Let us submit a new estimate of savings and investment for your mill, based on our experience in mills weaving a wide variety of fabrics. There will be no obligation. Address Dept. A, Boston, or the branch office nearest you.

IN 3 OUT OF 4 MILLS MORE NET RETURN
Universal System of High Speed Coning and Warping
UNIVERSAL WINDING COMPANY
BOSTON
NEW YORK · PHILADELPHIA · PROVIDENCE · SPRINGFIELD · UTICA · CHARLOTTE · ATLANTA
1734

Universal Standard Ring Travelers

Provide A Complete Ring Traveler Service

BECAUSE it must be a precision operation to secure the demanded quality and uniformity — THE U. S. RING TRAVELER COMPANY is fully equipped with the most modern machinery to meet the particular ring traveler requirements for the Spinning and Twisting of all yarns, also for the throwing of Silk and Rayon fibres.

THE PATENTED NEBOW VERTICAL TRAVELER is particularly recommended for lubricating rings.

THE PATENTED BEVEL EDGE TRAVELER FOR Silk and Rayon, Cotton or Wool Fibres.

THE BOWEN SPECIAL TEMPER ROUND AND SQUARE POINT TRAVELERS, in flat, oval and round wire. In sizes and weights to meet every requirement. Write for Samples and learn of the advantages found only in using the UNIVERSAL STANDARD RING TRAVELERS.

Manufactured exclusively by

U. S. RING TRAVELER COMPANY

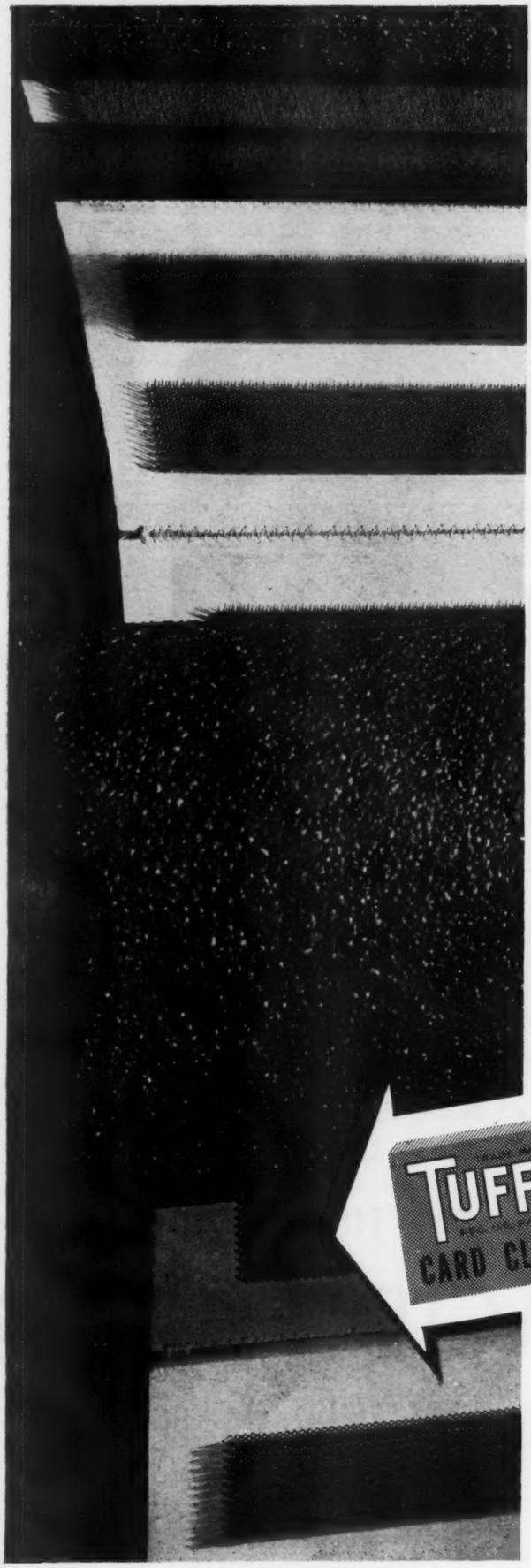
PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN
President and Treasurer

Sales Representatives

NEW ENGLAND:—Carl W. Smith
MID-ATLANTIC:— M. Lee Bolton
SOUTHERN:— (Wm. P. Vaughan
(Oliver B. Land
(Torrence L. Maynard

"A TRAVELER FOR EVERY FIBRE"



Carders put TUFFER Clothing into service without grinding

All Tuffer Card Clothing is ground with extreme accuracy before shipment. Every Tuffer wire is at uniform height. Each material and each operation from foundation to shipping container is subject to rigid inspection.

For sixty-nine years Tuffer has been winning the favor of both cotton and woolen mills throughout this country and Canada. Two things are responsible for this preference: (1) Tuffer quality; (2) Howard Bros. service.

A boss carder says, "I never grind any Tuffer Card Clothing when I first put it on; it comes so uniform and even, with such an excellent point, that it is not necessary to grind it."

Another customer writes: "You get repair work to us quicker than expected, and your quick service has saved us many costly delays."

Perhaps some of your clothing needs to be replaced. Try Tuffer and find out for yourself why so many mills order and then reorder.

Write to the nearest Howard Bros. office for quick and dependable service.

HOWARD BROS. MFG. CO.

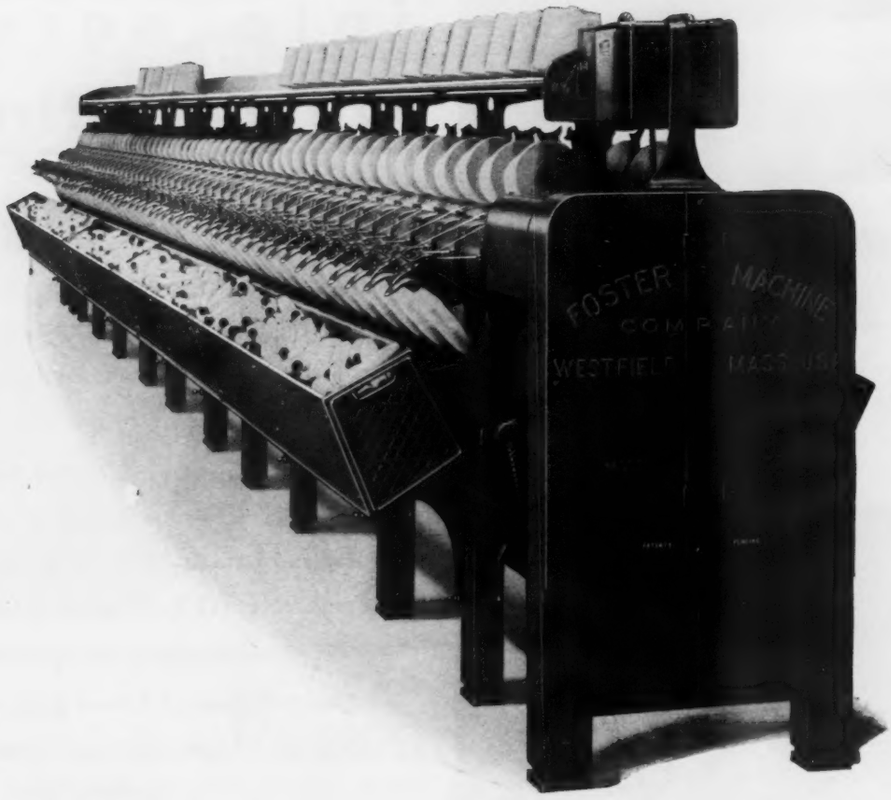
HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

So. Plant: 244 Forsythe St., Atlanta, **Branch Offices:** Philadelphia, Dallas, Washington

Products: Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers, Fancies, and Cylinders, Doffer Rings, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins Rewired at Southern Plant. Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

★ ★ ★ ★ ★ ★

Production Increased 100%



THE Foster Model 102 Cone Winder conforms to Foster tradition in that it is designed with primary regard for the quality of the fabric for which the yarn is intended. That is, it provides the correct lay of yarn, correct taper of cone, and a density of package that is both UNIFORM and MOST SUITABLE FOR KNITTING.

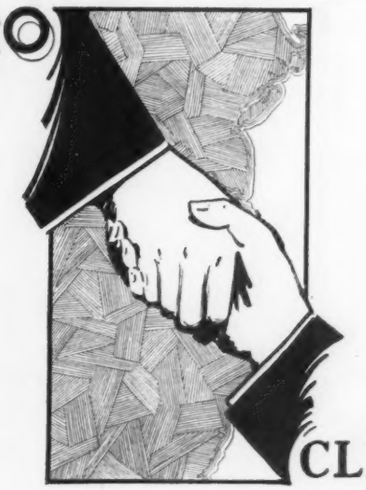
STANDARD FOR THE KNITTING TRADE

FOSTER MODEL 102

FOSTER MACHINE CO., WESTFIELD, MASS.
SOUTHERN REP.—FRED P. BROOKS, BOX 941, ATLANTA, GA.

★ ★ ★ ★ ★ ★

SONOCO



CLIMAX
LOWELL

Join Hands to serve you better

The facilities of the Sonoco Products Company, Hartsville, S. C., the Climax Tube Company, Mystic, Conn., and the Lowell Paper Tube Corporation of Lowell, Mass., have been combined to give better service to the customers and prospects of each.

The six plants of this combination—located in five states and Canada, are strategically placed, assuring even faster deliveries of the products you use.

WE ARE BETTER FITTED THAN EVER BEFORE TO FILL YOUR NEEDS

The merged units will be known as the Sonoco Products Company with main office continuing at Hartsville, S. C. The Northern Group, consisting of plants located in Garwood, N. J., Mystic, Conn., and Lowell, Mass., will be known as the Climax-Lowell Division, with sales and executive offices at Mystic, Conn.

Whenever we can be of help, please write, phone or wire our nearest office.

SONOCO PRODUCTS COMPANY

HARTSVILLE, S. C. MYSTIC, CONN.

WEST POINT TEXTILE GEARS

made from

SPECIAL ALLOY CAST IRON, CARBON STEEL, BRASS, BRONZE

in any type

SPUR, BEVEL, SPIRAL, INTERNAL, WORM, RACK AND SPROCKET

with

CUT OR CAST TEETH

●

Prompted by the desire to more completely and adequately serve textile mills, we have added considerably to our gear making equipment. These facilities enable us to economically produce all types of gears used in textile mills.

●

Your Inquiries are Solicited

●

WEST POINT FOUNDRY & MACHINE COMPANY

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

Also manufacturers of loom beams, beam heads, beam barrels, cloth inspecting machines, card cylinder bearings, picker drives and loom parts

● FOR FINISHING YARN DYED GOODS

RAPIDASE

THE ENZYMATIC *All-purpose* DE-SIZING AGENT!

. . Rapidase is the ideal softening agent for yarn dyed goods.

. . A simple treatment with Rapidase quickly and safely breaks down sizing materials and puts the fabric in excellent condition for finishing.

WALLERSTEIN CO.

INCORPORATED

171 MADISON AVENUE NEW YORK CITY

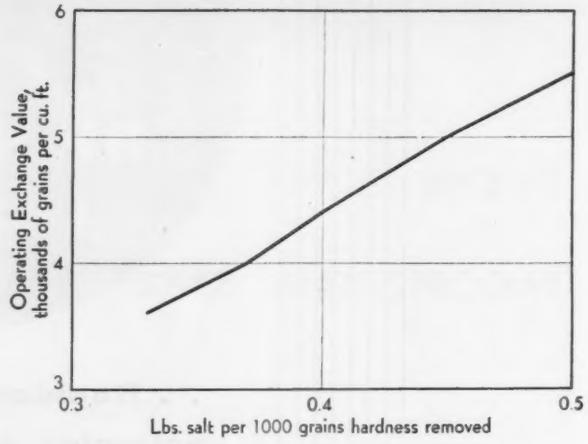
SUPER-ZEO-DUR

SAVES SALT FOR WATER SOFTENERS

• Super-Zeo-Dur is a brand-new zeolite for the softening of water. It is a greensand type of zeolite, which has been especially processed so as almost to double its capacity.

This revolutionary new zeolite has a *flexible* capacity. When operated at the capacity of ordinary greensand, its salt requirements are greatly reduced. The economy in salt is usually 35% to 50%.

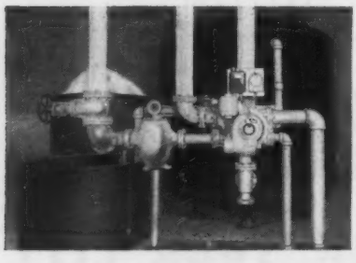
And at the same time, it has a reserve water softening power. By increasing the salt used, the capacity of Super-Zeo-Dur is correspondingly increased. The relation between salt requirements and capacity is shown in the chart.



If you are now operating a zeolite water softener, write us for full information as to how a refill of Super-Zeo-Dur will save you a substantial percentage of the salt you now use.

Build modern efficiency into your old equipment by remodeling with this new zeolite and full automatic control (see cut). It will pay handsome dividends by giving you greater capacity, lower salt consumption, and more positive performance than before.

Bring us your water problems. Twenty years of specialized experience have made us the largest manufacturers of water treating equipment in the world. Write The Permutit Company, 330 West 42nd Street, New York City.



Permutit Automatic Zeolite Water Softener—Lowers the cost of producing soft water. No overrunning. No under-regeneration. Automatic controls can be applied to existing equipment. Write for information.

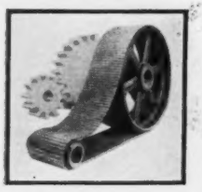
Permutit

Water Treating Equipment

Don't forget this!—

LINK-BELT SILVERSTREAK SILENT CHAIN DRIVES *are*

Flexible AS A BELT



Positive AS A GEAR

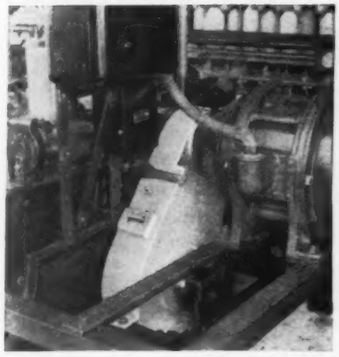
More efficient THAN EITHER

TO which should be added the important item of long life —years of uninterrupted service, at the same high efficiency as when the drive was first installed.

Some of the results are:

- Maintenance of full productive capacity. As the drive operates positively, there can be no loss of power through drive slippage.
- Greater uniformity of product, because of the smooth uniform transmission of power.
- Steady, dependable operation, and lower maintenance and replacement expense.

More facts are given in Data Book 125 and Stock List 725. Send for them. Link-Belt Silent Chain Drives are made in sizes from ¼ to 1000 H. P., and over. Drives ½ to 60 H. P. are carried in stock by distributors.

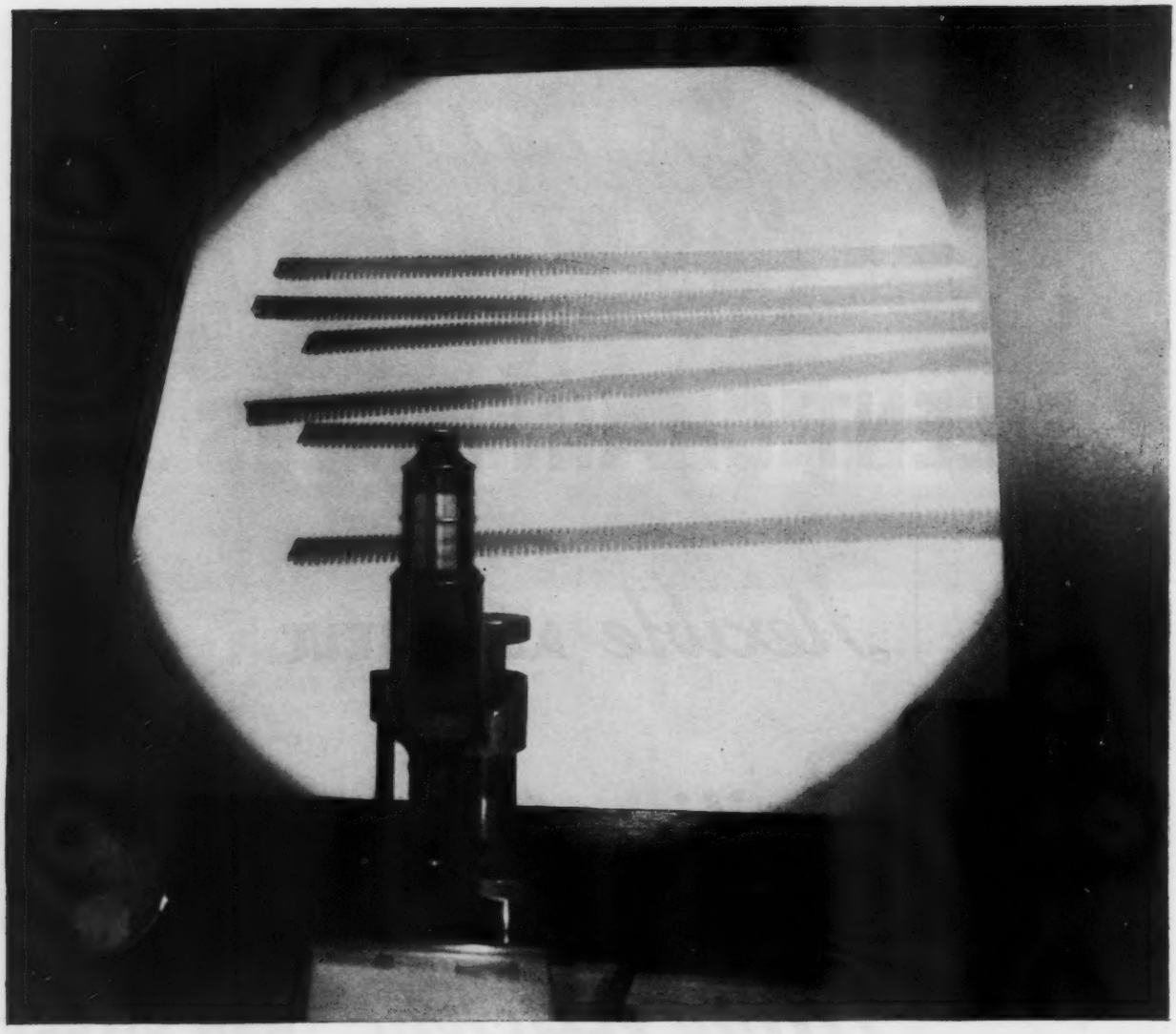


Showing the improved Link-Belt Tex-Til Automatic - Lubricating Silent Chain Drive Casing which absolutely prevents oil leakage and assures a cool-running drive.

LINK-BELT COMPANY 5189A

The Leading Manufacturer of Positive Power Transmitting Equipment

CHICAGO PHILADELPHIA INDIANAPOLIS ATLANTA SAN FRANCISCO TORONTO
NEW ORLEANS DALLAS BALTIMORE *Offices in Principal Cities*



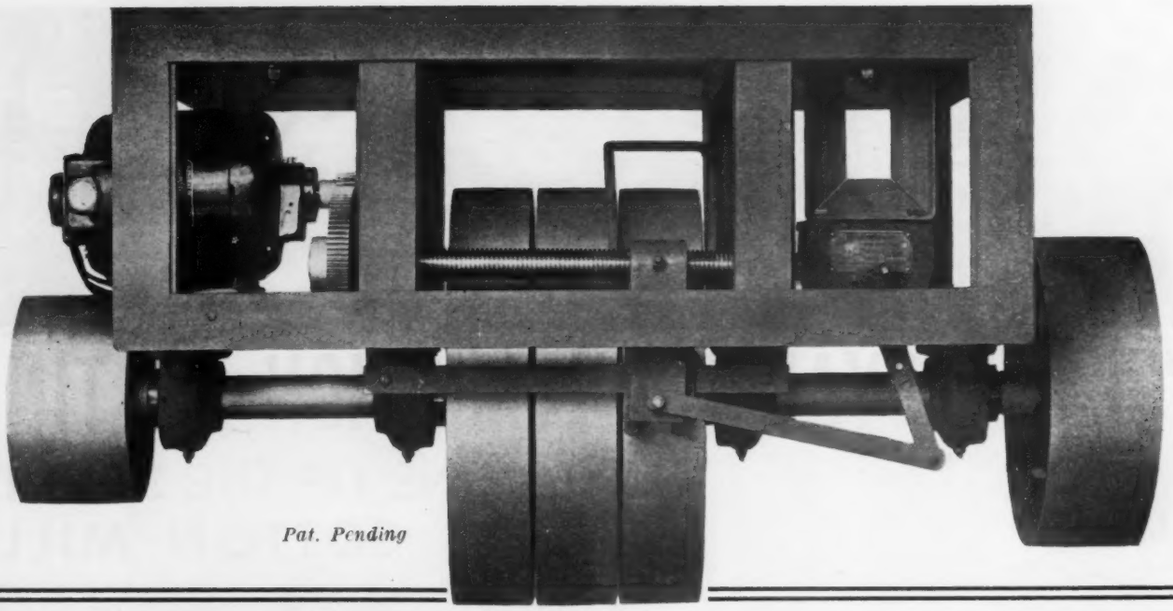
WHY MAZDA LAMP FILAMENTS ARE MAGNIFIED 75 TIMES FOR ACCURATE INSPECTION!

THE lamp filament used in a MAZDA Lamp of General Electric manufacture is actually finer than a human hair. This filament is coiled, and the spaces between the coils must be unvaryingly accurate. To inspect them against possible inaccuracies in spacing, every single filament used in these MAZDA lamps is magnified 75 times! Another instrument weighs the diameter of the filament. If the weight is right, the diameter is right. Even so slight a deviation as 15/100ths of 1% from normal diameter at any point in the filament may reduce the life of the lamp as much as 23%.

Such microscopic accuracy in making filaments is another reason why MAZDA lamps of General Electric manufacture give you maximum light for their designed life. Look for this mark GE on the end of every lamp you buy. General Electric Co., Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC

MAZDA LAMPS



Pat. Pending

The "CAMCO" Differential Drive

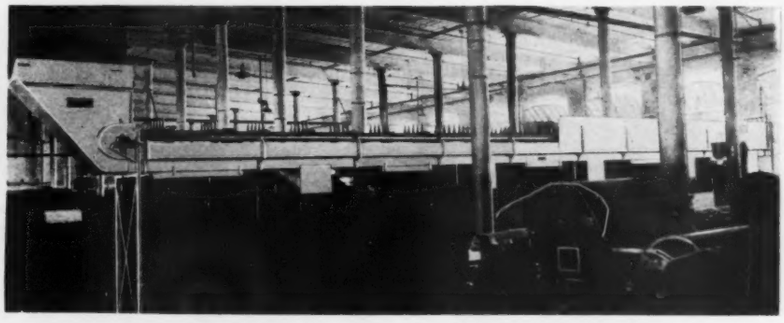
INCREASES - Operating Efficiency of Cotton Cleaning Machines

INSURES - - - Production of Cleaner and More Even Picker Laps

Actual mill operating tests over several years proved that stop-start controls reduce the efficiency of cotton cleaning machines. When such controls stop the flow of cotton from the bale openers, the cleaning machines run idle and handle no cotton. When the flow is started, the cleaning machines handle too much cotton. Maximum cleaning efficiency under such operating conditions is manifestly impossible.

The "CAMCO" Differential Drive has been developed to eliminate such difficulties. When used in connection with the "G.E." Cotton Feed Control, the bale openers are slowed down and the delivery rate reduced when the picker hoppers are filled, and the bale openers are speeded up and the delivery rate increased when the pickers have used up the cotton in transit. The cleaning machines naturally do much better cleaning than they could under full load, as there is always some cotton passing through them, and the peak load is less than is necessary when cleaning machines run idle every time a stop-start control operates.

Another material operating advantage of the new "CAMCO" Differential Drive is that it prevents choke-ups in cleaning machines caused by failure of cage condensers at the end of the line to thread and deliver cotton when the flow is started through them after they have delivered all cotton in transit through the cleaning machines at the moment the stop-start control stops the flow from bale openers. When they fail to thread and deliver, cotton piles up in the cleaning machine and is damaged. When the "CAMCO" Differential Drive is used, there is always some cotton on the cage condenser screens and between the delivery rolls, always insuring the condensers threading and delivering when the load is increased.

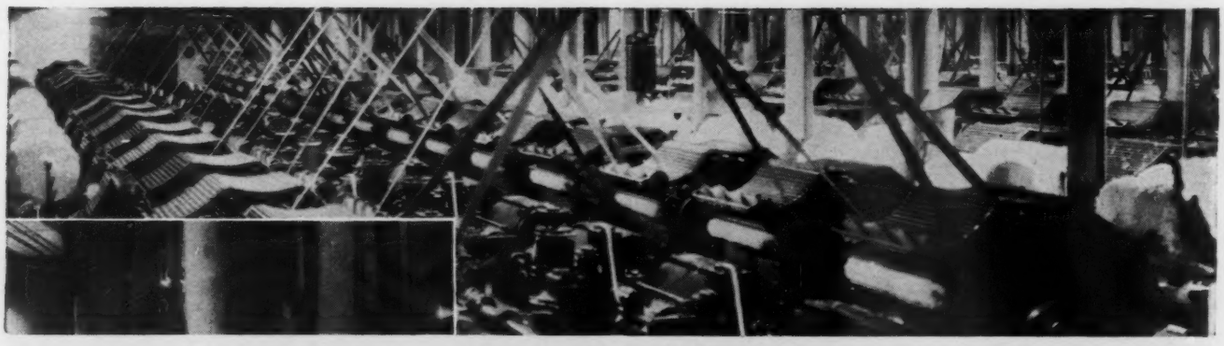


The "CAMCO" Automatic Non-Overflow Distributor with "G.E" Electric Cotton Control

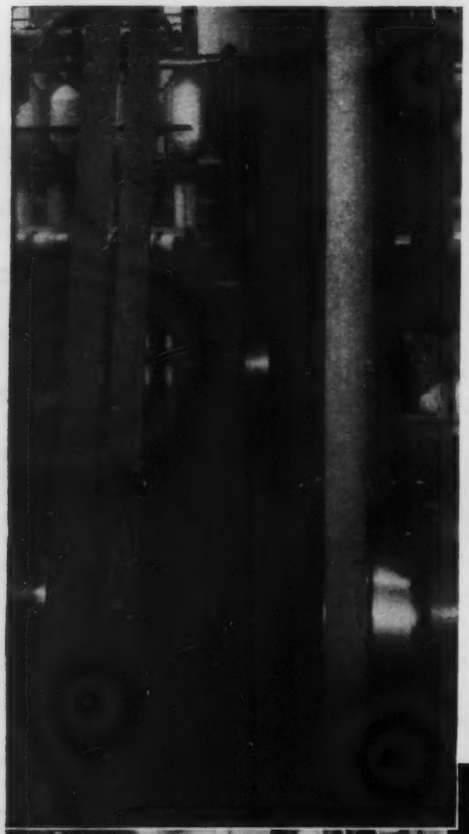
A Centrif-Air engineer will gladly call on you without obligation to explain this new Drive and also the "CAMCO" Automatic Non-Overflow Mixing and Cleaning Distributor with "G.E." Electric Cotton Control. A postcard will bring you full details. Write today.

The CENTRIF-AIR MACHINE CO., Inc.

858 Ashby Street, *Engineers and Manufacturers* **ATLANTA, GA.**



"U. S." ROYAL TRANSMISSION BELTING



SERVES ONE OF THE SOUTH'S LARGEST COTTON MILLS

Examples Prove Superiority of "U. S." ROYAL RUBBER BELTS for Textile Mill Drives

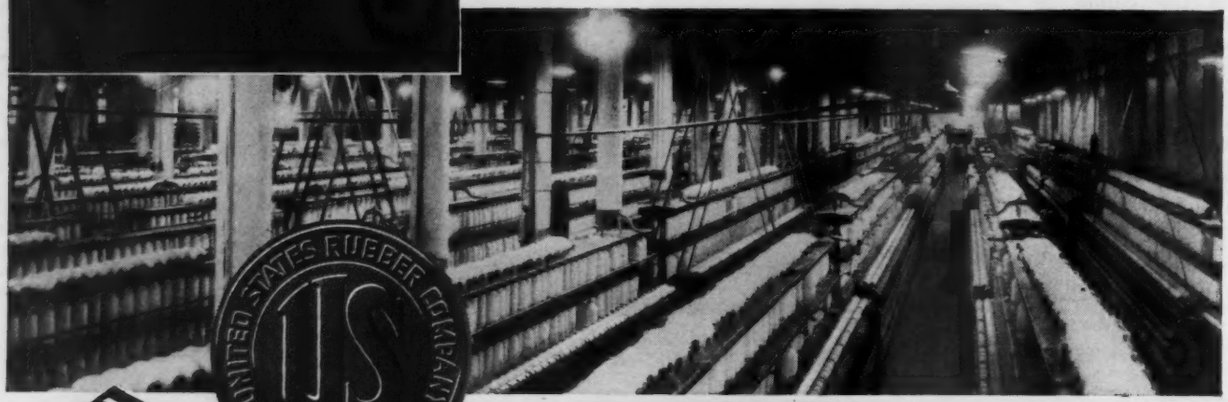
The very characteristics which have made "U. S." Royal Belts so successful for transmission duty in other industries recommend them for cotton mill service. Moderate first cost, very long life, and great capacity for punishment, as well as the fact that "U. S." Royals are made principally of COTTON, are directly responsible for their fast growing popularity for driving looms, cards and spinning frames. Many prominent mills have made "U. S." Royal Transmission Belts an essential part of their *Modernization Program.* The United States Rubber Company, Stocks in All Industrial Centres, 1790 Broadway, New York, N. Y.

Top—The majority of transmission belts on this battery of card machines are "U. S." Royals—3-inch five-ply construction. For this mill more than 3,000 feet of Royal belting has been bought since 1931 for cards, spinning frames and looms.

Left—This is a close-up of 3-inch five-ply "U. S." Royals in use on a "four group drive." These belts are put together with clipper lacings.

Below—In this typical spinning room, using the "modern group drive," more than 50 per cent of the belts in use are "U. S." Royals.

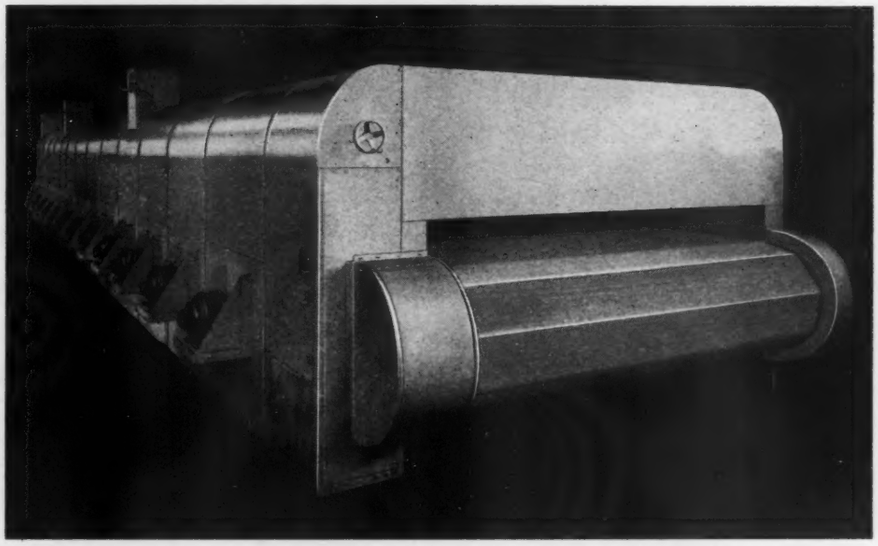
"U. S." FOR MODERNIZATION



TRANSMISSION BELTING

An Outstanding Value of the United States Rubber Company

Modern Drying Equipment



One Apron Stock Dryer

NEWEST DESIGN

A leader in its field. This Sargent Stock Dryer has proven its worth to many satisfied users. This general acceptance by owners can be attributed only to the superiority of design, materials and workmanship so characteristic of these machines.

FEATURES:

Centrifugal fans, direct motor connected, New type coils, Sectional Conveyor with speed control.

--NEW PATENTED CURVED TOP--

reduces air resistance—promotes free air flow.

SARGENT PRODUCTS

Acidifying Machine—Automatic Extractor—Automatic Feeders—Backwashers — Backwash Dryers — Bagging Machines—Ball Winder—Carbonizing Dryers — Cloth Dryers — Carbonizing Dusters—Cotton Stock Dryers — Crush Roll Machines — Press Roll Machines — Single Apron Dryer—Skein Dryer—Special Dryers — Wool Dryers — Wool Washers — Yarn Conditioners — Yarn Scouring Machines.

C. G. SARGENT'S SONS CORPORATION

Graniteville, Mass.—Founded 1852

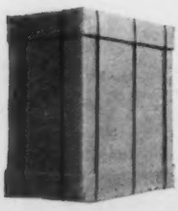
Southern Agents:
Fred H. White, Charlotte, N. C.
Fred P. Brooks, Atlanta, Ga.

Philadelphia Agent:
F. E. Wasson,
205 Ledger Bldg.

SARGENT IS THE PIONEER AMERICAN BUILDER OF DRYERS

I COULDN'T WRAP Acme Steelstraps IN CELLOPHANE, SO I INVENTED THE "ANNULAR WRAP"

Acme Bale Ties and Seals are veterans in the Textile Industry.



A heavy shipment of textiles in a fibre case bound securely with Acme Steelstrap.

Especially for shippers of textiles and other products where soiling must be avoided, this idea is invaluable.

The new "Acme Annular Wrap" (Pat. Pending) is its name. When the operators use Acme Steelstrap it's clean as a new nickel. There's no soiling of hands—no soiling of products being packed.

But that's not all. The Acme Annular Wrap protects Steelstrap from moisture, dirt and damage. The compact bundles actually cut storage space in *half*. All Acme Steelstrap coils are one continuous piece, uniform and convenient in size.

And of course, for bales and boxes, Acme Steelstrap cuts package and shipping costs—speeds up work and makes stronger, better containers.

I'll be glad to send you a set of tools, seals and strap for your job, if you will tell me what you ship and how you ship it—let you try them yourself. No obligation, or cost to you.

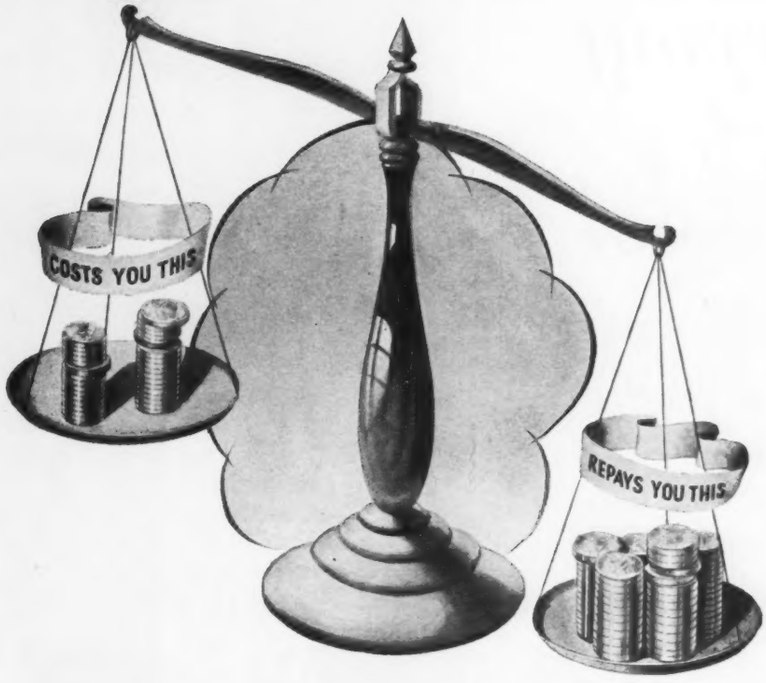
Doc. *Steelstraps*

Acme Steelstraps

ACME STEEL COMPANY · GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO

Branches and Sales Offices in Principal Cities

MONOBELT+ *MODERNIZATION*



YOU PAY it out and you get it back... plus. That's the story of MONOBELT and MODERNIZATION. Except that with inefficient power drives, you pay for equipment with waste and inefficiency . . . and get nothing in return. Power losses cut deeply into bank balances. Their accumulated daily totals soon amount to a staggering sum. Stop this waste to-day with a definite modernization plan! Alexander Brothers' engineering staff are offering you in MONOBELT, a scientifically made leather belt that will give the highest possible return in power transmission efficiency.

MONOBELT is a tough, pliable leather belt, with great adhesive qualities and perfect balance. It will carry a full load immediately upon installation and is extremely durable.

MONOBELT is a modern belt, built specifically for modern drives. Don't procrastinate . . . get the MONOBELT modernization facts to-day.

Alexander Brothers INC.
PHILADELPHIA PENNSYLVANIA
Sign of Merit SINCE 1867
MEMBER POWER TRANSMISSION COUNCIL

Hurrying Heels!

...THAT SPLASH AND SPOT

AQUAROL... The Water-repellent Finish...makes hosiery SPOT-PROOF! It meets the feminine fancy...accents daintiness...lengthens hosiery service.

AQUAROL is easily applied in a fresh water bath at room temperature...a five minute run *after* dyeing.

AQUAROL brings greater yarn elasticity...increases the length of the finished hose. Subsequent washings in a mild soap solution will prolong...even *increase* the water-repellent features.

You should learn MORE *about*

AQUAROL

Let us tell you!

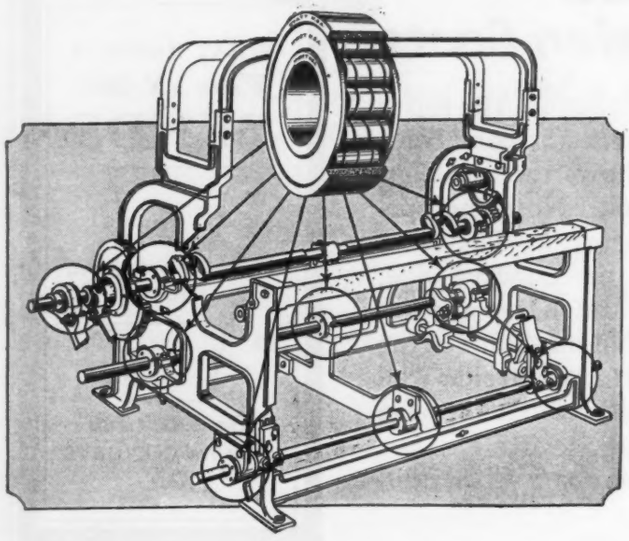
ARKANSAS CO·INC· 233 BROADWAY NEW YORK CITY

WHEN YOU BUY YOUR 1935 CAR

Will You Ask The Dealer to Leave Out Roller Bearings?

We very much doubt if you will—because all users of modern transportation, whether they purchase pleasure cars, trucks, aeroplanes or railroad trains, know that anti-friction bearings enable vehicles to run easier, last longer, make more efficient use of motors, require less gasoline per mile.

Then, Why Buy Looms Without Roller Bearings?



There is no reason why your looms should not be as modern as your transportation. You depend upon your looms to earn the money with which you buy your cars.

Make your looms truly efficient. Specify Hyatt Roller Bearings for crankshaft, camshaft, rockershaft and take-up roll. Hyatt Roller Bearing Company, P. O. Box 476 Newark, New Jersey.

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

"Feel that Side Change SHAPE as the V-BELT BENDS"

That's Why THE Concave Side Cuts Your Transmission Costs

Any V-belt *changes shape* when it bends. The top is under tension and *narrows.* The bottom, under compression, *widens.* Figure 1 (right) shows the resulting shape-change in a straight-sided belt. Note the out-bulge of the sides. Now look at figure 2. The same change of shape merely *straightens* the concave side, producing a contour that *precisely fits* the sheave groove.

Two big economies result: (1) No out-bulge at the side means uniform wear – *longer life!* (2) Full side-wall grip on the pulley holds heavier loads without slippage – a big increase in drive efficiency.

The Gates Vulco-Rope Drive is the *only* V-belt built with the patented concave side.

WHAT HAPPENS *When a* V-Belt **BENDS**

Fig. 1. *Straight-Sided Belt*

Fig. 2. *Belt with Patented* CONCAVE *Side*

THE GATES RUBBER CO.—*Factory Branches:*

Terminal Bldg. HOBOKEN, N. J.
1524 So. Western Ave. CHICAGO
2213 Griffin St. DALLAS
747 Warehouse St. LOS ANGELES
999 So. Broadway DENVER

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

OIL

When the *first* cotton mill was built in the South, Standard Oil Company supplied the lubricants.

It has been *first* in Southern mills ever since: It has kept pace with progress and development in the textile industry.

For each new specific need, the Standard Oil Company created a specific oil. And Standard Oil lubricants today are *standard* for textile mills.

Operate *your* machines at *maximum* efficiency. We have a grade for every need.

●

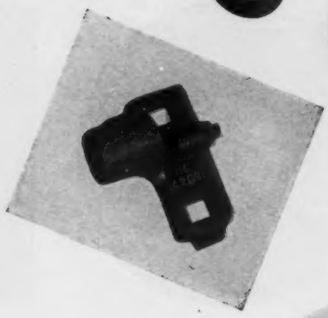
STANDARD OIL COMPANY

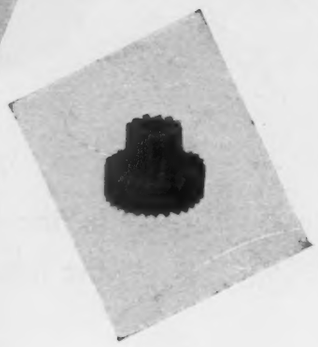
INCORPORATED IN KENTUCKY

Principal offices:

Atlanta, Ga.; Birmingham, Ala.; Jackson, Miss.; Jacksonville, Fla.; Louisville, Ky. Tampa, Fla.

HENDERSON





Reduce Maintenance Costs

Present day production with high speeds and overtime running demands that every machine be kept in tip-top shape at all times. Every part of every machine must be in perfect condition to attain economical efficiency.

A missing part at a rush period may mean a serious loss. Check up your stock room for all needed repair parts, and be sure they are always on hand ready for instant repairs.

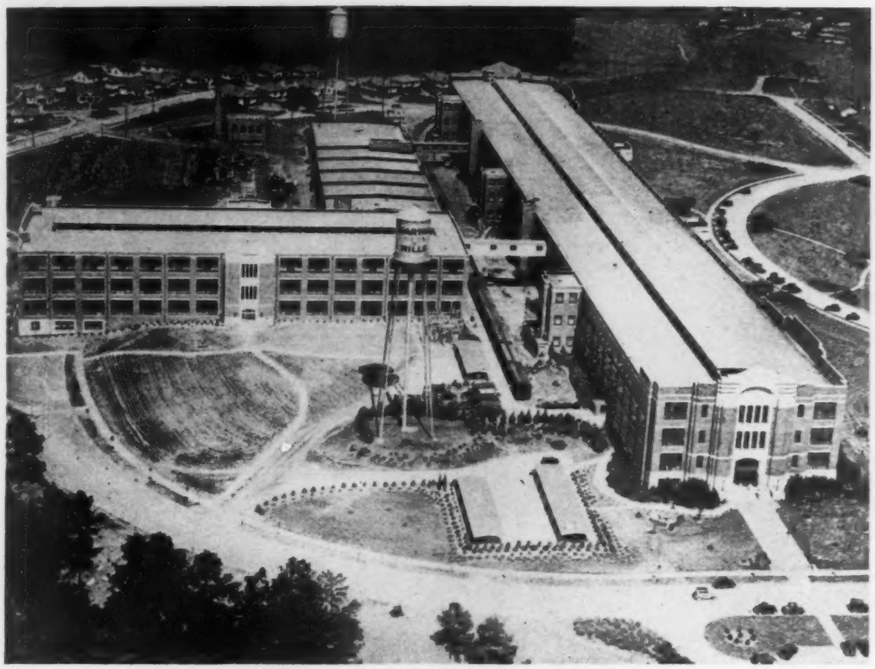
Long experience with textile equipment and knowledge of the weakest points in present day machinery, combined with skilled craftsmen, precision patterns and high quality materials assure the dependable, economical performance of every HENDERSON Repair part—and everyone of them ***fits*** the machine for which it was intended.

Let HENDERSON Repair Parts help you reduce maintenance costs. Let us quote prices on any parts for any textile machine.

HENDERSON FOUNDRY & MACHINE WORKS

HAMPTON, GEORGIA

REPAIR PARTS



B. F. GOODRICH COMPANY, MARTHA MILLS,
THOMASTON, GA.

JOHNSON AUTOMATIC CONTROL

for Space Heating—

In Unit B at Martha Mills, as in the original unit, JOHNSON *room thermostats* control temperatures in heated spaces, automatically, effectively. Excessive temperatures, detrimental to efficiency in workers and machinery, are prevented . . . . . JOHNSON apparatus is the result of fifty years of progress and development on the part of an organization devoted to just one line of endeavor—the DESIGN, MANUFACTURE and APPLICATION of automatic temperature and humidity control equipment . . . . . JOHNSON *thermostats* are more than mechanical devices—truly, instruments of precision. JOHNSON *metal diaphragm valves* are simple, rugged, fool-proof.

for Processing—

Temperature and humidity control is recognized as an essential factor in countless processes throughout the mill. JOHNSON offers a wide variety of equipment, tried and tested, to perform these services . . . . . *Extended tube thermostats,* for wet or dry bulb control from a remote point . . . . . *Insertion Thermostats* to sense temperatures through walls or in ducts and tanks . . . . . *Remote readjustable thermostats* to facilitate resetting . . . . . Room and insertion *humidostats* to regulate relative humidity, with elements so sensitive to moisture that, where required, operation may be had at less than 1% at 95% saturation! . . . . . Direct reading *humidity indicators* with accurate dry-bulb thermometer attached . . . . . Water, steam, and three-way mixing valves . . . . . The RECORD-O-STAT, an extended tube thermostat and temperature recorder, combined in one instrument.

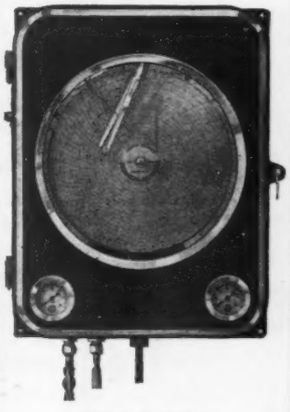
A Johnson man will be glad to explain the application of these and many more devices. A request for a survey involves no obligation.

ROOM THERMOSTAT

Accurate regulation for space heating.

HUMIDITY INDICATOR

Direct reading of relative humidity with dry-bulb thermometer.

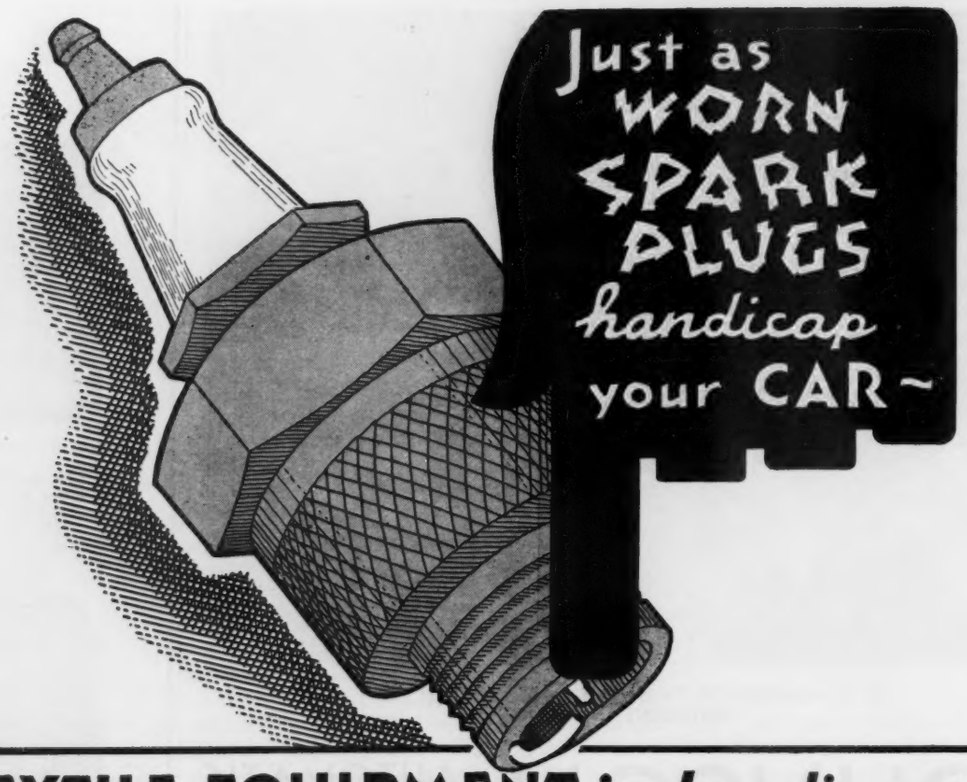


RECORD-O-STAT

Combined controller and recorder.

JOHNSON SERVICE COMPANY--Main Office and Factory: Milwaukee, Wis.
Branch Offices in Cincinnati, Atlanta, and other Principal Cities

JOHNSON AUTOMATIC HEAT & HUMIDITY CONTROL



~TEXTILE EQUIPMENT is *handicapped* by *Inferior Processing Compounds!*

You can't get the best performance out of a car with worn spark plugs. Nor can you get the finest production from your textile equipment with "cheap", inferior textile compounds.

Give your modern machinery and your skilled dyers and finishers more effective processing compounds to work with . . . and you increase their production possibilities.

Put ONYX laboratory-controlled processing and finishing compounds into your mill. They give you every requirement for uniform production—lower operating costs — reduced troubles — and higher quality fabrics.

ONYX compounds are made by "specialists on finishing materials". Each product is specifically developed thru research and testing, to give the finest results in its particular operation. And each compound is UNIFORM, guaranteed by careful laboratory control.

Turn these advantages to profit in your bleaching, sizing, dyeing, printing and finishing on all fabrics. Write for test samples, stating operation and fabric. Our laboratories are at your service to help solve any processing problems.

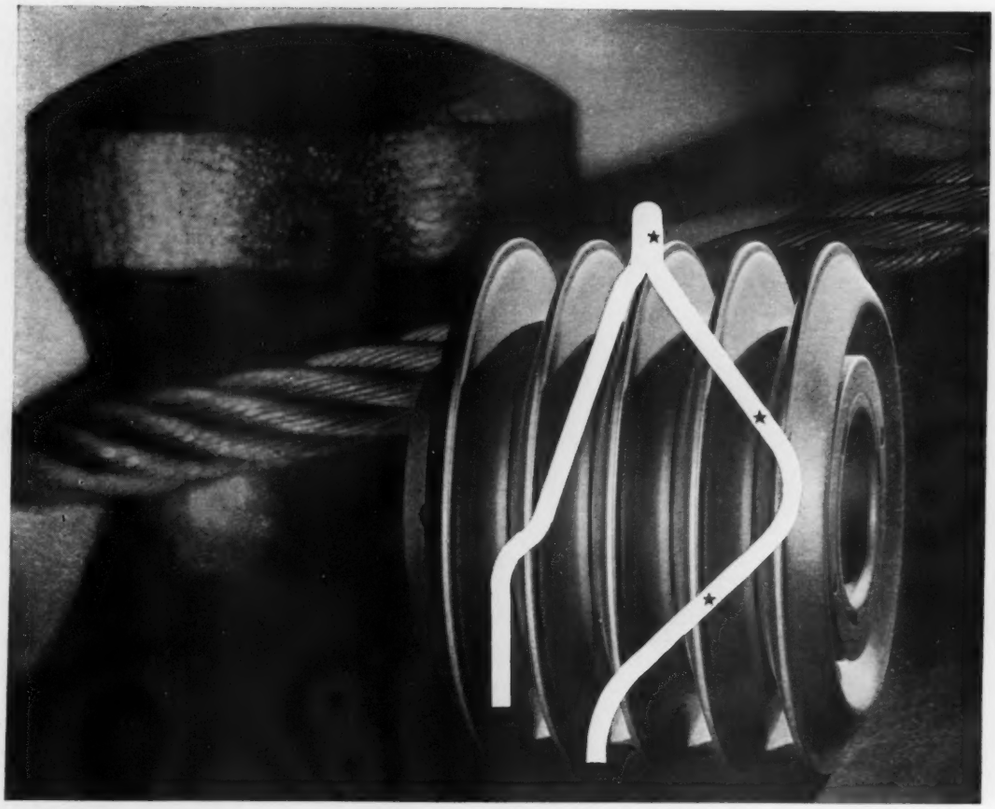
ONYX OIL & CHEMICAL CO.

Specialists on Finishing Materials,

Jersey City, N. J.

Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

Onyx
LABORATORY-CONTROLLED
PROCESSING & FINISHING COMPOUNDS



STRENGTH

A mere two and one half inches of steel wire, in the form of a hawser, can handle 330,000 pounds of ship . . . if properly constructed and properly spliced. • A mere seven pounds of high grade pressed steel, in the form of a rotating sheave, can transmit 330,000 foot pounds of power per minute . . . if properly designed and properly fabricated. • The newly designed Duro-Brace Texsteel Sheaves, for Texrope V-Belt Drives, can do this and do it day in and day out under the severest conditions, for, in the new Duro-Brace design, the outside walls are reinforced by convex steel plates, which so greatly increase their strength as to eliminate distortion, thus giving a true-running, vibrationless drive always. • Texrope Drives are 98.9% efficient, silent, slipless, shock-absorbing, require no belt dressing or lubrication, and are not affected by dirt or moisture. • Mail us a card asking for Bulletin No. 2188 which sets forth the advantages which Duro-Brace Texsteel Drives offer you in all matters of power transmission, whether they be simple or complex.

★ ★ ★

Former Design: cross-section showing unsupported outside plate.

New Duro-Brace Design: cross-section showing outside plate braced by a convex reinforcing steel plate.

TEXROPE DRIVES

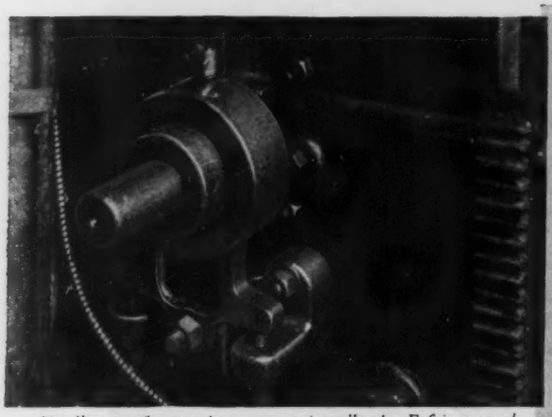
ORIGINATED BY

ALLIS-CHALMERS MANUFACTURING COMPANY · MILWAUKEE, WISCONSIN

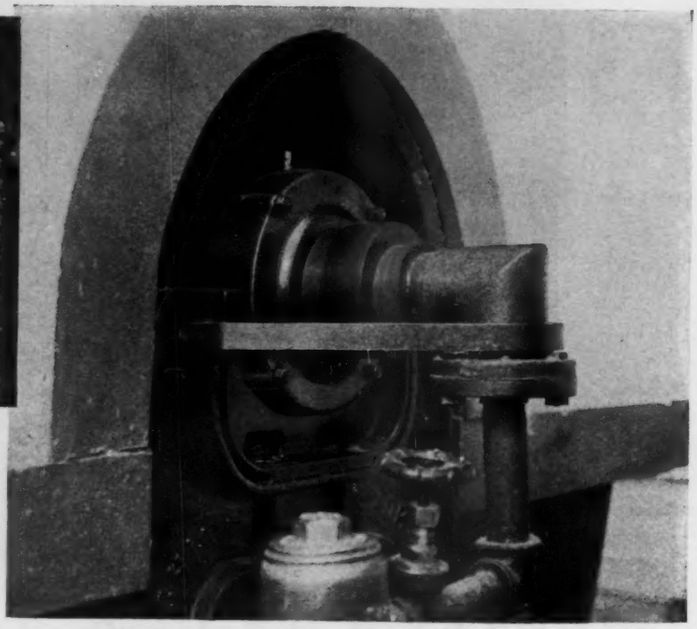
ALLIS-CHALMERS

Uniform Yarn, Without Stretch . . .

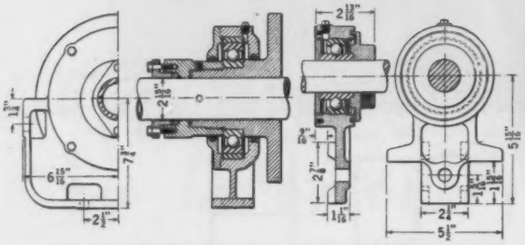
with FAFNIRS *on the Slasher*



No adjustment for wear is necessary on size rolls when Fafnirs are used



Cylinders are always correctly aligned with Fafnir Ball Bearings



Large and Small Cylinder

Size Roll

Yarn with higher breaking strength is produced when slasher cylinders are equipped with Fafnir Ball Bearings. Starting tension with Fafnir bearings is less than one-tenth of that present when plain bearings are used. This nearly complete elimination of friction gives a yarn that is more uniform and practically without stretch.

Fafnir ball bearings make possible an even feed with maintained cylinder position. Journals equipped with Fafnirs will not wear at unequal rates, a condition which would tend to stretch the selvage on one side of the warp.

Ball bearing size rolls keep shafts in line and stuffing boxes tight, and safely support the load. With Fafnirs, troubles from leaking size are entirely removed for the shaft cannot cut out the stuffing boxes.

These advantages of Fafnir-equipped slashers are inherent in the "most complete line of Ball Bearings in America." Fafnirs assure the most efficient bearing for each application in the textile industry — for they are engineered to meet a definite need . . . THE FAFNIR BEARING COMPANY, *New Britain, Conn. Representatives also at*: Atlanta, Ga. . . . Houston, Texas . . . Charlotte, N. C. . . . Boston, Mass. . . . Dallas, Texas . . . Birmingham, Alabama.

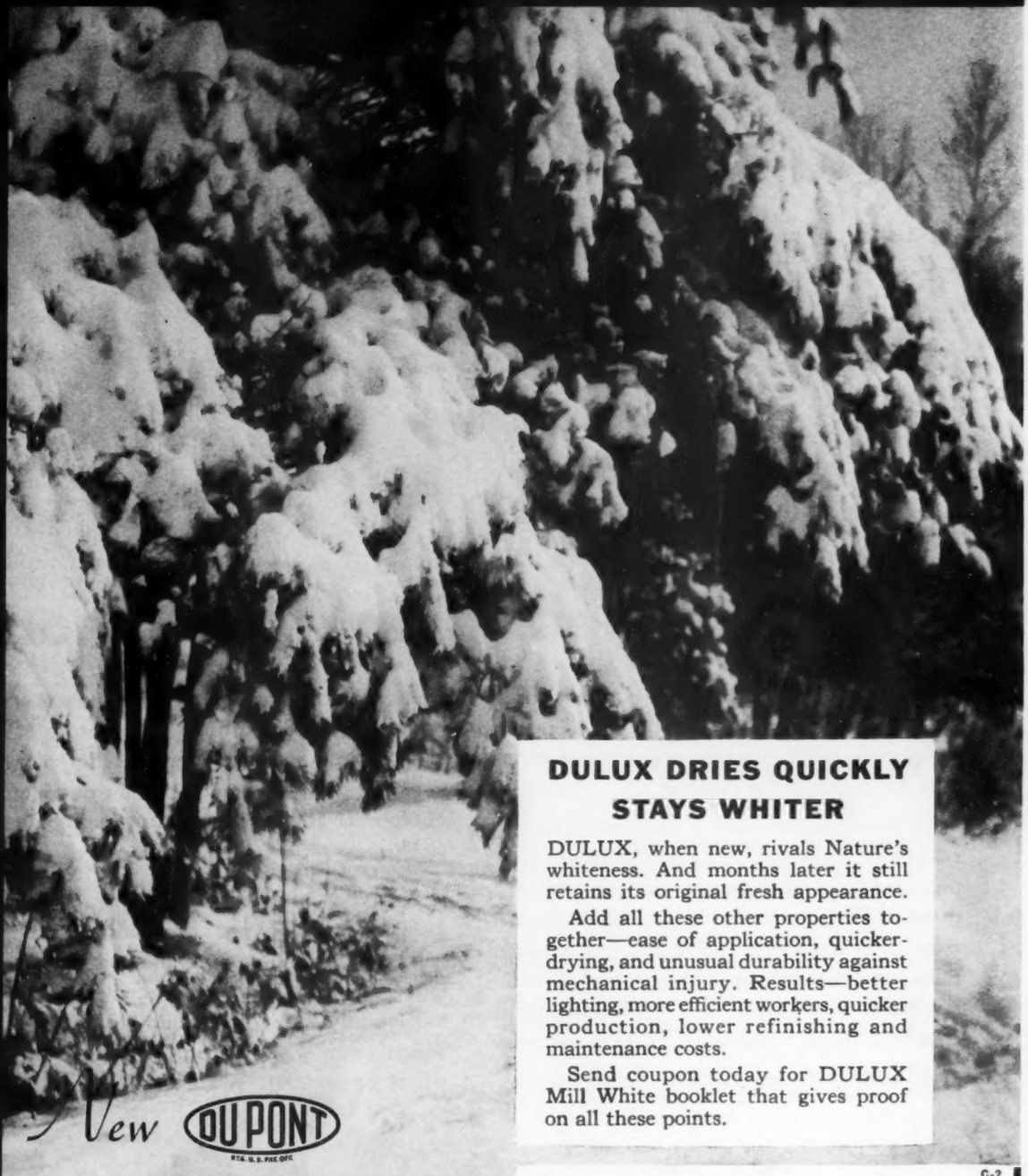
FAFNIR BALL BEARINGS ARE NOW IN SERVICE IN SUCH TEXTILE MACHINERY AS THE FOLLOWING:

Bale Breakers	Dyeing Equipment
Feeders	Extractors
Openers	Dryers
Feed Tables	Printing Machinery
Distributors	Agers
Breaker Lappers	Soapers
Intermediate Lappers	Tenter Frames
Finisher Lappers	Calenders
Cards	Button Breakers
Roving Frames	Shoddy Pickers
Spinning Frames	Garnett Machines
Twisters	Burr Pickers
Winders	Mixing Pickers
Warpers	Scourers
Slashers	Fulling Mills
Looms	Shearing Machines
Bleaching Equipment	Rayon Pot Spinners

FAFNIR BALL BEARINGS

THIS SNOWY WHITENESS

FOR YOUR WALLS



DULUX DRIES QUICKLY
STAYS WHITER

DULUX, when new, rivals Nature's whiteness. And months later it still retains its original fresh appearance.

Add all these other properties together—ease of application, quicker-drying, and unusual durability against mechanical injury. Results—better lighting, more efficient workers, quicker production, lower refinishing and maintenance costs.

Send coupon today for DULUX Mill White booklet that gives proof on all these points.

New DU PONT

DULUX

REG. U. S. PAT. OFF.

MILL WHITE

THE WHITER WHITE THAT STAYS WHITE

C-2

E. I. du Pont de Nemours & Co., Inc.
Finishes Division, Wilmington, Del.

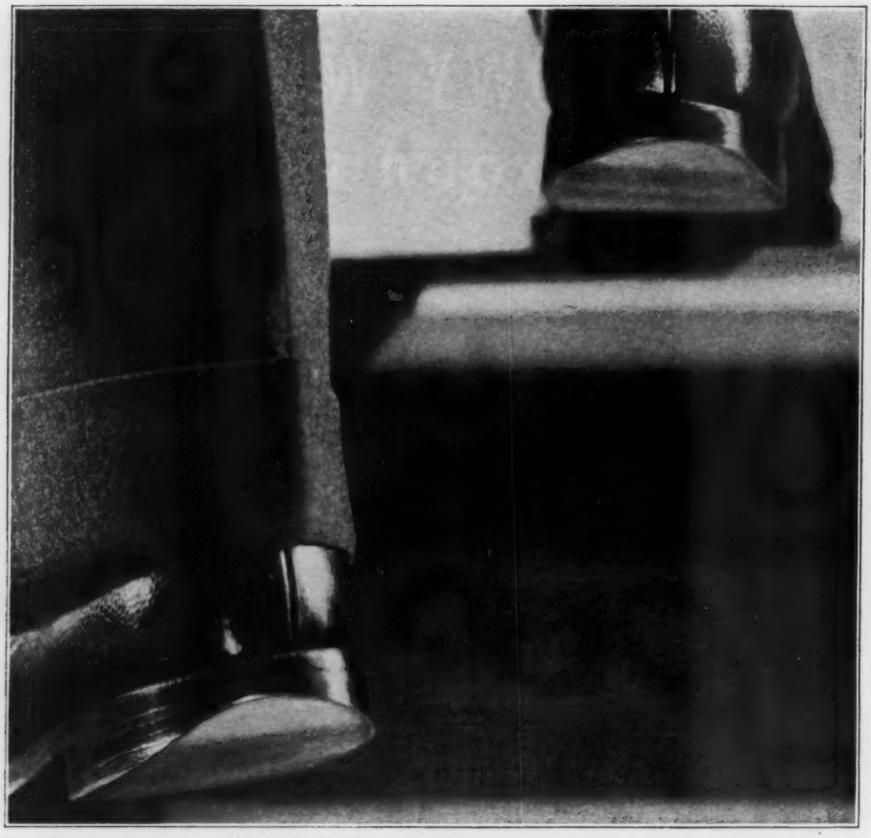
I'll be glad to have your booklet, "DULUX Mill White." Send it to

Name.....

Company.....

City.....*State*.....

Position.....



A down-at-heel plant loses money

• There are industrial plants today tottering unsteadily on run-over heels. Production is halting, costs are excessive. It's time for a trip to the cobbler.

To the executive who is responsible for the continued health of a business enterprise, the plant engineer's requests for replacements grow, of their own accord, into imperative demands. In too many plants the fine balance between economic retrenchment and plant impairment has been lost. To save a dollar too often means to lose a thousand. It's time to check up!

A large clothing factory increased daily cloth production 30% by installing Crane steam traps to maintain proper temperature of machines without fluctuation. In other plants—in your plant—there may be new and modern equipment unable to earn its way because of inadequate piping, worn valves, or leaky fittings.

Ask your engineer for a report on your plant. Crane engineers will gladly cooperate with your consultants to the end of detecting loss and waste, and recommending the least costly means of rehabilitation. We will send you, without obligation, our plant check list. Write for it today!

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS · NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

7300 GALLONS in this plant—

AGFA ANSCO CORPORATION

paint their Binghamton, N. Y., plant throughout with Barreled Sunlight

IN 1928, Agfa Ansco Corporation painted the ceilings and walls of their new film plant, shown in foreground above, with 4800 gallons of Barreled Sunlight. So well was this lastingly clean, white paint suited to the nature of Agfa Ansco work that the following year they painted their paper factory (in background) with Barreled Sunlight, using 2500 gallons. Now Agfa Ansco use Barreled Sunlight exclusively for all painting. Another proof of the superiority of Barreled Sunlight for industrial interior painting!

These Long-Time, Large-Quantity Users, Too

PEPPERELL MFG. COMPANY
Users since 1898

THE GROSVENOR-DALE COMPANY
Users since 1907

EDWARDS MANUFACTURING CO.
Users since 1907

INDIAN HEAD MILLS OF ALA.
Users since 1909

COOPERS, INC.
Users since 1910

BELDING HEMINWAY COMPANY
Users since 1911

CANNON MILLS CO.
Users since 1914

. . . and hundreds of others

The Vial at Right contains refined linseed oil commonly used in white oil paints. The yellow color of this linseed oil disappears when the oil is properly mixed with white pigments. The white paint it makes *looks* white. But don't be fooled! The yellow is still there. Sooner or later it will appear upon your painted ceilings and walls!

The Vial at Left shows how the same highly refined linseed oil, as contained in the first tube, appears after treatment by the "Rice Process." It is almost pure white. This "Rice Processed" linseed oil is the principal reason why Barreled Sunlight remains white, year after year . . . spreads and hides better, flows more easily.

YOUR SURETY

We maintain that Interior Barreled Sunlight Gloss, the "Rice Process" White will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.

WE WELCOME trial comparative tests at any time for whiteness, opacity, ease of application, square footage and length of life, under equal conditions, against any other interior gloss white on the market. Send for free test sample can of Barreled Sunlight. Make your own comparisons or ask us to send an experienced representative. Write U. S. Gutta Percha Paint Company, 8-B Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

BARRELED SUNLIGHT

REG. U. S. PAT. OFF.

RHOADS TANNATE LEATHER BELTS

TANNATE MAY SAVE YOU MONEY —It has for others

On hard drives, Tannate Leather Belting often outlasts oak belting three to five times; and frequently wears twice as long as special tanned belts of other makes.

In one mill a Tannate Belt running five years and three months on a spinning frame, was still in good condition.

In another mill a Tannate Belt was still running in good condition after eight years service.

In still another, a woolen mill, the superintendent remarked, "Tannate never wears out."

For hard drives its great strength, strong grip and extra long life are so combined as to make Tannate Leather Belting an exceptionally economical power transmitting medium. Far better than V-Belts for short center drives, and probably unequalled for longer belt drives.

Let our engineers help you with your installation problems.

Send us your orders and take advantage of the Rhoads Service Guarantee.

J. E. RHOADS & SONS

PHILADELPHIA, 35 N. SIXTH ST.
NEW YORK, CHICAGO, ATLANTA, CLEVELAND
FACTORY, WILMINGTON, DEL.

SAVE BY MODERN GROUP DRIVES

RHOADS TANNATE

IS THERE A NEW PROFIT POSSIBILITY?

Consider these recent statements from the Power Transmission Council:

There are large differences in investment, operating and maintenance costs between two systems of power application, namely, Unit Drive and Modern Group Drive.

Cost reduction is now the biggest problem before industry. Power-cost is today the greatest controllable factor in cost reduction.

"We shall have to sell over seven million yards of additional production to make up for **just the carrying charges** on the difference in cost between these two methods of transmitting power to our machines." Thus a textile head summed-up the problem.

In a metal working plant, additional production to the value of 7 per cent of the entire machine investment had to be sold to offset **carrying charges alone** on the difference in cost between the Unit and Group methods of applying motor power to the work.

An answer to the question of how to reduce costs is usually found through correction or modernization of power and transmission equipment.

Let the Rhoads Engineers help you with your problems.

Obermaier

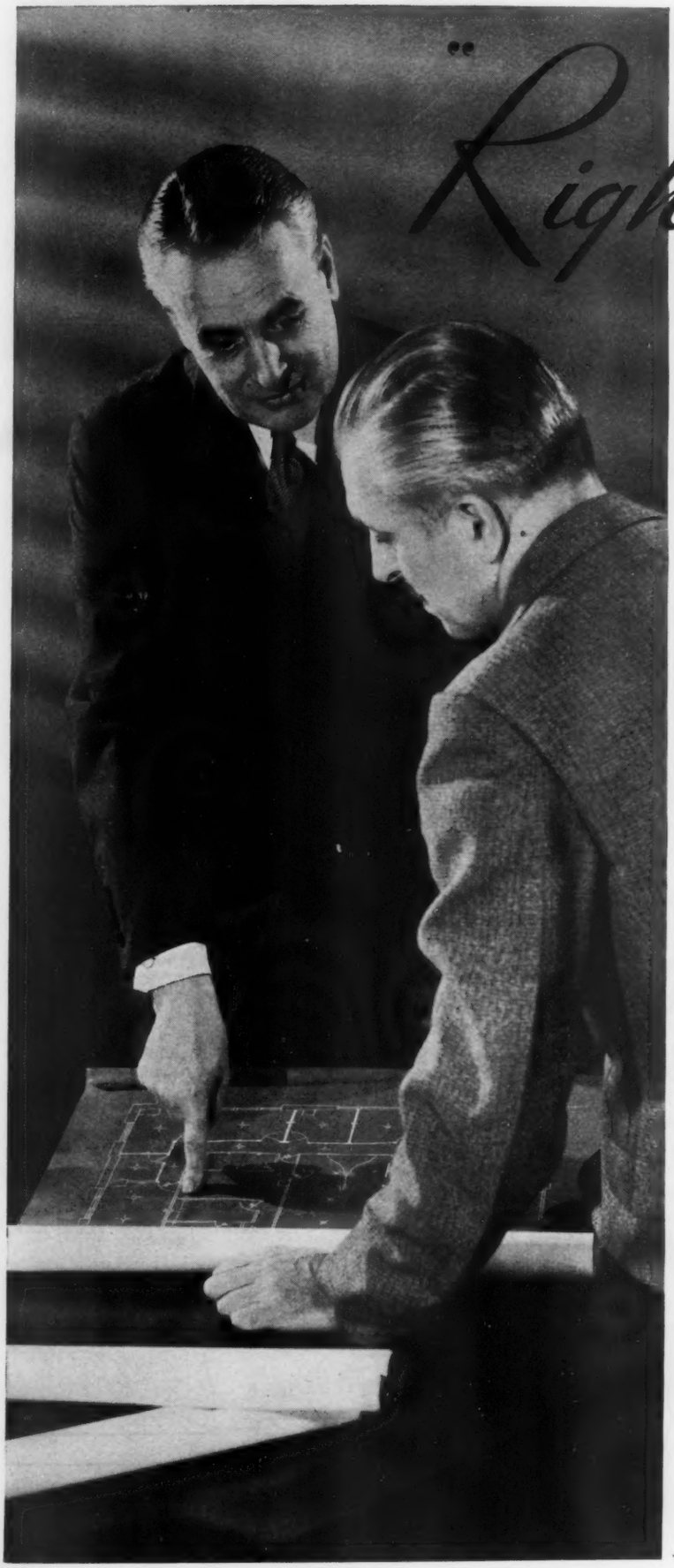
Package Dyeing and Drying in a Complete Cycle

The packages are dyed and dried on the same material carriers—eliminating hydro-extractors and labor.

Packages remain clean and in their original forms.

The same system applies to Roving, Slubbing and Beams.

AMERICAN OBERMAIER CORP., 11-20 Forty-Ninth Ave., Long Island City, N.Y.



"Right there

WE'LL NEED MODERN TEMPERATURE CONTROL"

Here's one thing that is essential in planning today for tomorrow's profits. Guard your product and profit with Taylor control from slashing to finishing.

YOU'RE RIGHT. Mr. Superintendent. Right there . . . and there . . . and over here . . . the right kind of temperature control will assure the high quality of your goods, speed output, and minimize production costs. And a Taylor System of Control can be engineered to meet specific needs.

If plans for modernizing your present set-up . . . for enlarging plant facilities . . . or for building a new mill unit are still in the early stage, don't wait. Even if you are holding off for economic conditions to improve, you can settle *now* on the most efficient temperature control.

Taylor engineers will bring their many years' experience in the textile field to your temperature problems. They have been responsible for many examples of money savings, product improvement and production efficiencies. They have made Taylor Slasher Control standard in the industry. Their skill in designing and installing exact control extends through to the finishing process. A study of your needs . . . a survey of your present mill will bring specific recommendations. The Taylor principle is that there can be no one system for every situation. Yours should have special study. Why delay using this Taylor service?

You can get it quickly by writing to Taylor Instrument Companies, Inc., at Rochester, N. Y., Atlanta, Ga., Boston, Mass., or Toronto, Canada.

Taylor

Indicating Recording • Controlling

TEMPERATURE, PRESSURE and FLOW

INSTRUMENTS

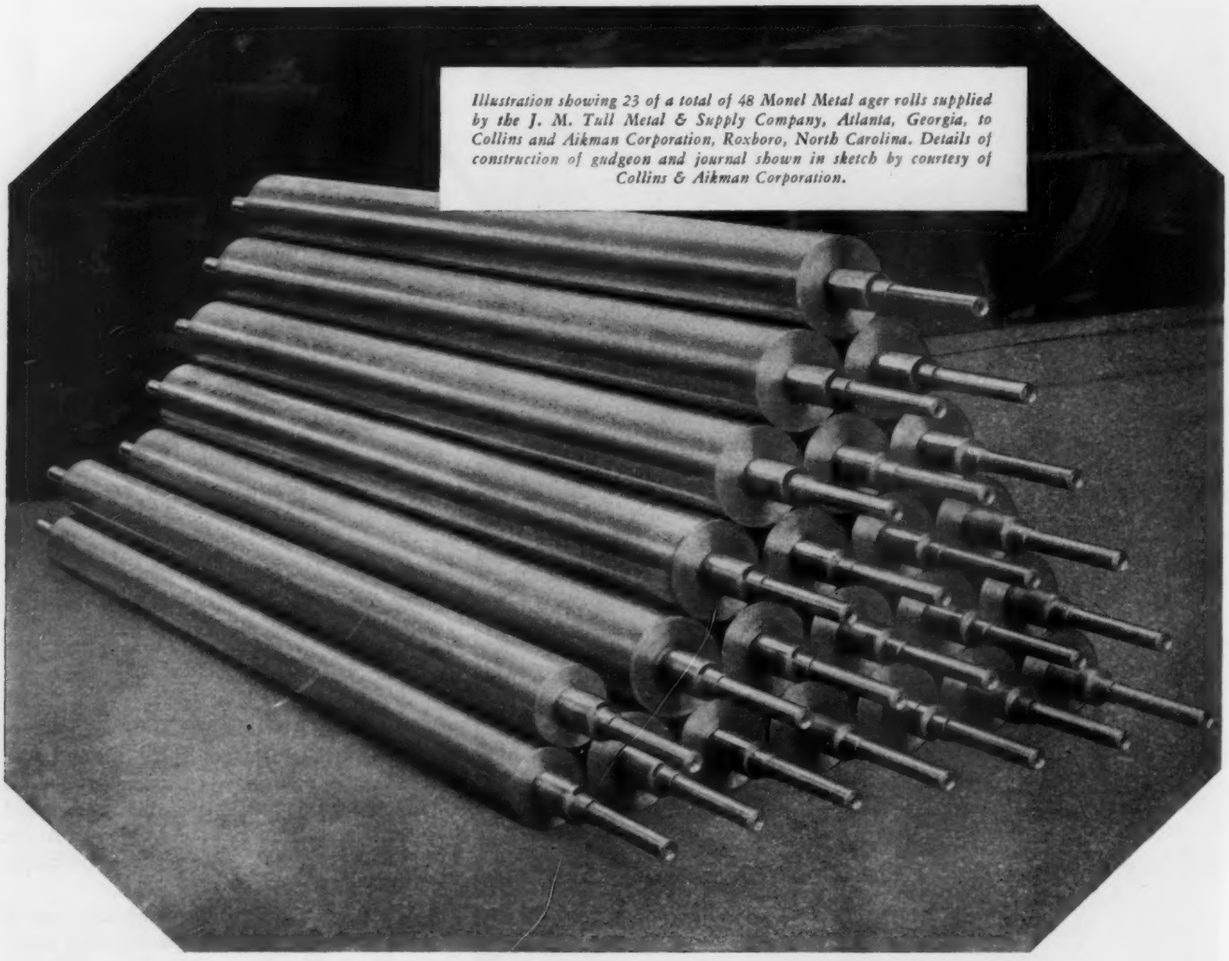


Illustration showing 23 of a total of 48 Monel Metal ager rolls supplied by the J. M. Tull Metal & Supply Company, Atlanta, Georgia, to Collins and Aikman Corporation, Roxboro, North Carolina. Details of construction of gudgeon and journal shown in sketch by courtesy of Collins & Aikman Corporation.

MONEL METAL *PLAYS IMPORTANT* ROLES *in Textile Performance!*

Immersion rolls, dye jig rolls, slasher rolls and washing equipment and cloth carbonizing dryer rolls . . . . they are all made of this famous high-Nickel alloy

CHECK UP on Monel Metal rolls in active service and you find that they are used because Monel Metal offers advantages that no other metal possesses to such great degree:

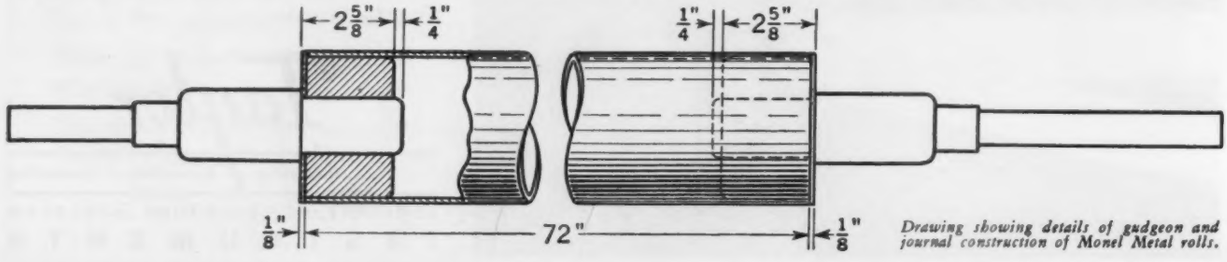
They are rust-proof and resistant to corrosion. They are unusually strong, tough and rigid. Their hard, smooth surfaces take a glass-smooth polish . . . no danger of injury to the most delicate fabrics.

Moreover, Monel Metal is practically unaffected by any of the commonly used dyestuffs. And in addition, Monel Metal textile, dyeing and finishing equipment is known for its long life and freedom from repairs.

Write for list of fabricators able to supply rolls of any of the types listed above.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



Drawing showing details of gudgeon and journal construction of Monel Metal rolls.

In Textile Mills This Man Is a Symbol of Smart Maintenance Management

He Represents A Clean—Positive—Economical Lubrication System

● In hundreds of textile mills, on machines of all types, Alemite has proved its ability to cut operating costs—shown owners and operators that where the *man with the gun* is put in charge of lubrication, maintenance savings immediately result. This modern system makes machines run more efficiently with less power, assures positive, adequate lubrication of every vital bearing surface, and—of utmost importance—*it's clean.* The lubricant is delivered in definite, measured quantity and *stays where it's put*—removing the risk of leakage—eliminating "seconds."

Alemite ends the fuss and mess of cleaning out leaky, dripping oil holes. Dirt, lint and other drying or abrasive materials get no opportunity to injure or "gum" bearing surfaces. *The man with the gun does a complete lubrication job* in less than half the time required by obsolete methods—saves lubricant and many costly repairs, in addition.

Don't delay another day. Have an Alemite Lubrication Engineer analyze your lubrication requirements—show you where the application of Alemite on Looms, Carding Machines, Pickers, Winders, etc., will save you money and increase production efficiency. This analysis service is offered free and without obligation. Simply address a note on your letterhead to:

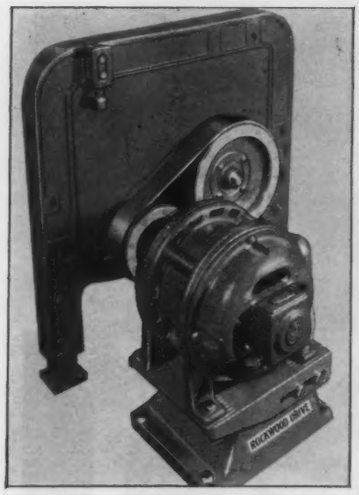
ALEMITE CORPORATION NRA CODE
(Div. of Stewart-Warner Corp'n.)
1884 Diversey Parkway Chicago, Illinois

ALEMITE
REG U.S. PAT OFF.

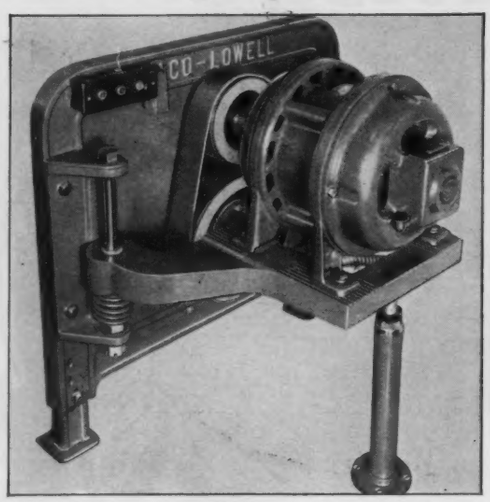
Controlled Application of the Correct Lubricant

★ SEE THE ALEMITE EXHIBIT AT THE TEXTILE SHOW ★

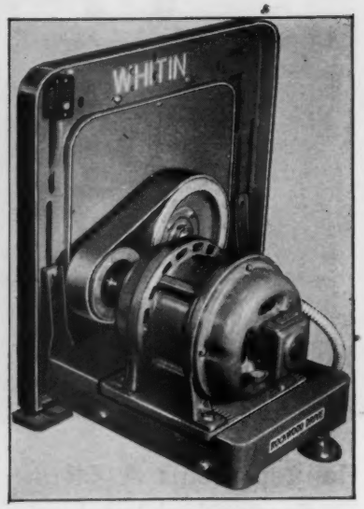
3 practical drives for SPINNING FRAMES



• In this trim, compact drive, the motor is pivotally mounted on a special base 8" off floor. Simple adjustments permit establishing correct belt tension and quick pulley alignment when drive is installed. The pivoted motor-weight then assures uniform transmitting capacity throughout the life of the drive.



• This drive employs the ROCKWOOD Vertical Drive principle, with the motor mounted above the driven pulley, to give maximum clearance from the floor and to permit wide range in the selection of pulley sizes and belt lengths. Correct belt tension is maintained by rugged springs beneath the motor shelf. The drive is reversible and will be favored by many mill engineers.



• For mill engineers who prefer shelf or bracket mounting for motors, this drive will be of particular appeal. The pivoted motor base is recessed in the welded steel shelf, making a neat, sturdy installation. Motor is 8" or more off floor. The shelf is designed for a minimum of space and it also is easy to keep clean.

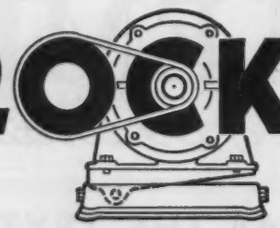
STIMULATED by the enthusiastic endorsement of ROCKWOOD pivoted-motor drives in the textile industry, ROCKWOOD engineers have developed these important improvements and refinements in spinning-frame drives.

Now you have your choice of three modern motor mountings—floor, shelf or vertical—all practical, all thoroughly proven in mill operation. These drives are low in initial cost, easy to install, dependable in transmitting capacity, have high *sustained* efficiency and are low in maintenance expense.

Before you change any drives in your mill—either for individual machines or for lineshafts — investigate the savings ROCKWOOD Drives can make for you. Write today for full information.

THE ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, INDIANA

Division of General Fibre Products, Inc.

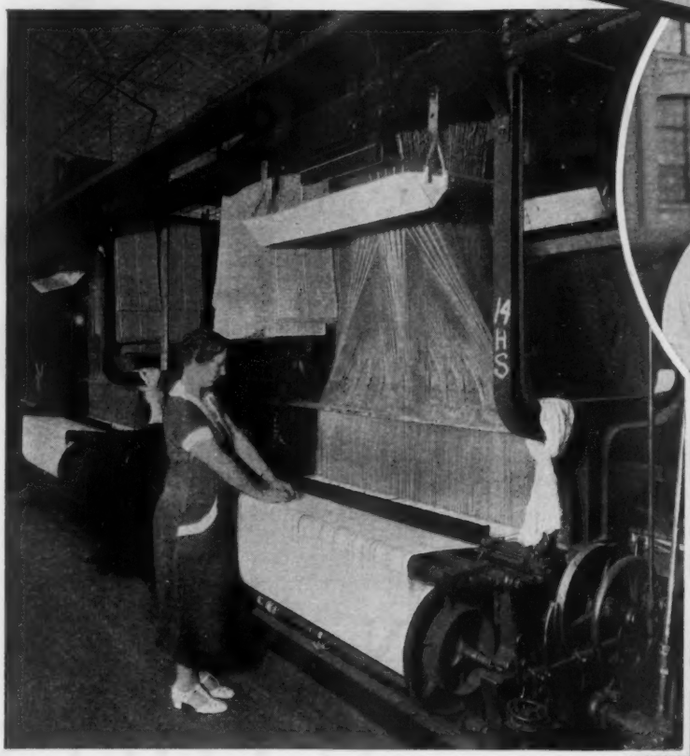


ROCKWOOD DRIVE

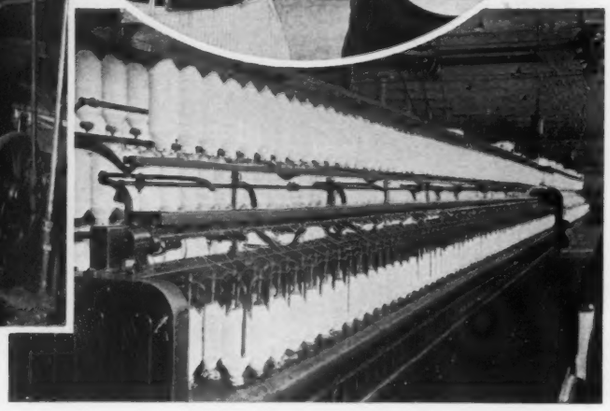
SHORT-CENTER FLAT BELT

"MINIMUM MAINTENANCE COSTS WITH GULF"

THAT'S WHAT OFFICIALS OF MANVILLE-JENCKES PLANT SAY AFTER GULF QUALITY LUBRICANTS HAVE BEEN PUT TO WORK . . .



V. J. Lipscomb, Asst. Supt. and C. L. Jolly, Plant Supt., Loray Plant, Manville-Jenckes Corp., Gastonia, N. C.



(*Above*) Gulf lubricants, properly applied, protect the gears and other moving parts of this loom and prevent unnecessary soiling of the cloth.

(*Right*) Ring rails, spindles, drafting rolls, cylinders and driving parts of this intermediate roving frame are kept running smoothly with Gulf lubricants.

"GULF PROVIDES *most efficient lubrication*"—say officials of this textile plant. And many others—in all parts of the country—are reporting *definite* economies from the use of Gulf quality lubricants.

Fewer shutdowns for repairs, smoother operation of all machinery, and lower maintenance costs accompany the use of Gulf products.

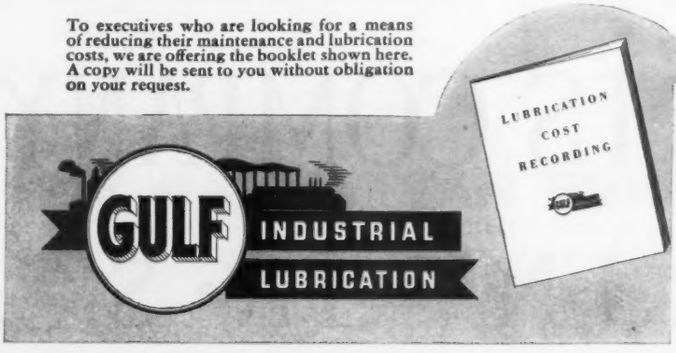
If you are not using Gulf lubricants we suggest that you discuss with a Gulf engineer just what improvements can be made in the lubrication of your machinery.

GULF REFINING CO., PITTSBURGH, PA.

District Sales Offices:

Boston New York Philadelphia Atlanta New Orleans
Houston Pittsburgh Louisville Toledo

To executives who are looking for a means of reducing their maintenance and lubrication costs, we are offering the booklet shown here. A copy will be sent to you without obligation on your request.



C. 2

GULF REFINING COMPANY,
3800 Gulf Guilding, Pittsburgh, Pa.

Please send me without obligation, the booklet "Lubrication Cost Recording."

Name..... Title.....

Company.....

Address.....

Labels
ALL KINDS

Tickets
AS USED ON BLANKETS

Hang Tags & Bolt Ends

Stickers
FOR IDENTIFICATION AND CONSTRUCTION SPECIFICATIONS

Riders

Box Tops
FOR HOSIERY

Bands
FOR ALL BOLT GOODS HOSIERY OR SHIRTS

These are

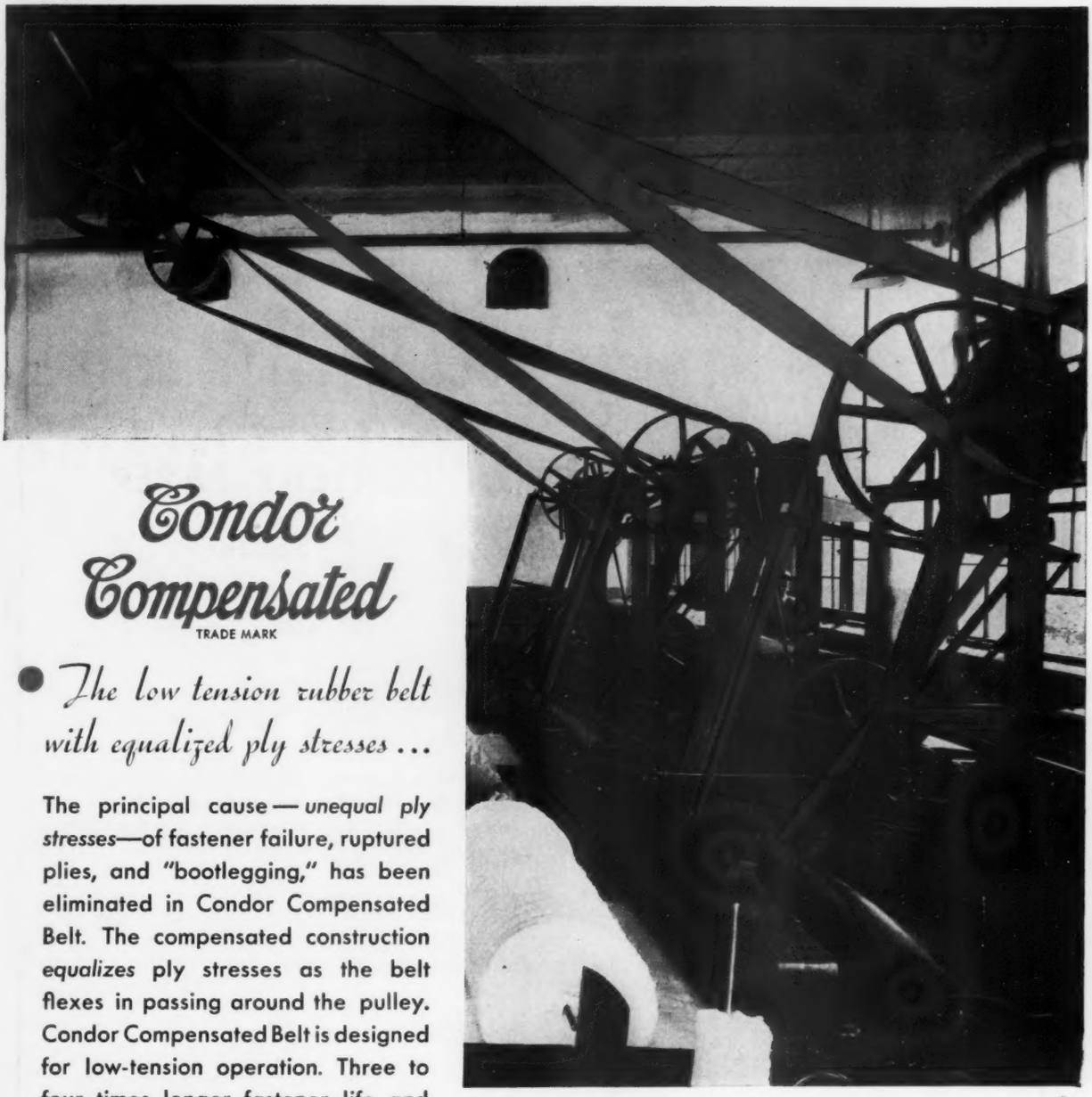
SALES BUILDERS

For SOUTHERN TEXTILES

NEW DESIGNS · REPRODUCTIONS

JACOBS GRAPHIC ARTS COMPANY

CLINTON · S.C.



Condor Compensated

TRADE MARK

● *The low tension rubber belt with equalized ply stresses . . .*

The principal cause — *unequal ply stresses*—of fastener failure, ruptured plies, and "bootlegging," has been eliminated in Condor Compensated Belt. The compensated construction *equalizes* ply stresses as the belt flexes in passing around the pulley. Condor Compensated Belt is designed for low-tension operation. Three to four times longer fastener life and greatly increased belt service are the result. . . . Its special high-coefficient-of-friction surface handles peak overloads without slip. Condor Compensated Belt will reduce most belting budgets—a trial will convince you.

Sold by leading jobbers

Condor LINE

V-Belt	Fire Hose
Flat Belt	Steam Hose
Air Hose	Suction Hose
Cone Belt	Molded Goods
Acid Hose	Oilless Bearings
Water Hose	Rubber Lined Tanks

Rubber Covered Rolls
Industrial Brake Blocks and Lining

NRA MEMBER U.S. CODE Reg. 29-021

THE MANHATTAN RUBBER MFG. DIVISION

OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES and FACTORIES, 310 TOWNSEND ST., PASSAIC, N. J.

COTTON
and CHAMPION COTTON CONTENT PAPER
Are The Products of the South

* * * *

Champion "Cotton Content" is a high class white paper for all business purposes—printing and writing—produced by a blend of selected fibres—cotton and wood—and made available for the growing needs of the South.

The Champion Fibre Company make a variety of high grade papers, including **Book Paper, Sulphite Bond, Envelope Paper,** and **Writing Paper**—all made from selected fibres and are Champion Fibres in the true sense.

The Champion Fibre Company make a complete line of Board Specialties.

The Champion Fibre Company make a high grade **Sulphite Textile Wrapper.**

* * * *

The Champion Fibre Company also manufacture Caustic Soda in Solid, Flake and Liquid forms, Sodium Hypochlorite, Sodium Resinate, Tanning Extract and Turpentine.

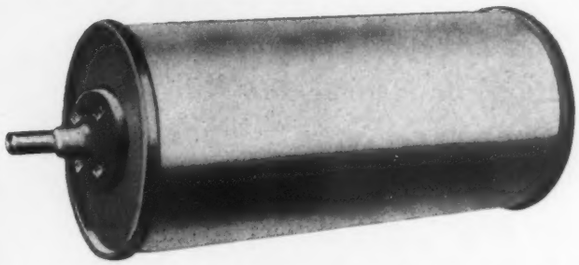
The
CHAMPION FIBRE COMPANY
CANTON, N.C.

The W. R. C. Smith Publishing Company, Publishers of "COTTON," are users of Champion "Cotton Content" paper.

REZISTAL

REG. U. S. PAT. OFF.

The Stainless Steel That Is Solving Many Mill Problems



THE textile industry now realizes the many superior qualities of REZISTAL—the pioneer stainless steel which has been used by over 5000 industrial plants for many years to prevent corrosion, increase durability, reduce weight and add permanent beauty of appearance.

● The acceptance of REZISTAL by the textile industry makes possible the solution of many problems heretofore encountered in the manufacturing, dyeing and finishing of textiles.

● For instance, take the Dry Cans used by a large Southern mill, one of which is pictured above. These Dry Cans, made of REZISTAL, have a perfect surface that will resist oxidation and remain bright. Having a much higher tensile strength than copper, it can be thinner and therefore will conduct heat more quickly. These cans will never require repairs, will resist staining and are easy to clean, requiring no scrubbing.

● This is only one of the hundreds of places throughout the mill where REZISTAL will be found more economical and efficient than any other material—stronger, brighter, more resistant to rust, stains, acids, etc.

● The same metallurgical astuteness which maintains our position as the world's largest producer of tool and special steels is behind REZISTAL. We have studied the many uses where REZISTAL can be applied practically and economically in the textile mill and finishing plant and we offer this valuable experience to you.

May we show you many practical ways to use REZISTAL Stainless Steel in YOUR mill. Drop us a line today for full information.

CRUCIBLE STEEL COMPANY OF AMERICA

General Offices: 405 LEXINGTON AVE., NEW YORK, N. Y.

Branch Offices and Warehouses:

Atlanta	Cincinnati	Los Angeles	Portland	Seattle
Baltimore	Cleveland	Milwaukee	Providence	Syracuse
Buffalo	Denver	New Haven	San Francisco	Toronto
Boston	Detroit	New York	Springfield, Mass.	Washington
Chicago	Houston	Philadelphia	St. Louis	London
		Pittsburgh	St. Paul	

The VANDERBILT Hotel

New York City

Visitors

always enjoy its Atmosphere of Friendliness and Charm and its Air of Distinction as well as its Excellent Cooking and Exceptional Service . . . . Its Convenient Location, its Nearness to Railway Terminals, Shopping District, Theatres, make it the

"Handiest" Stopping-place in New York

To these Attractions add

REMARKABLY LOW RATES

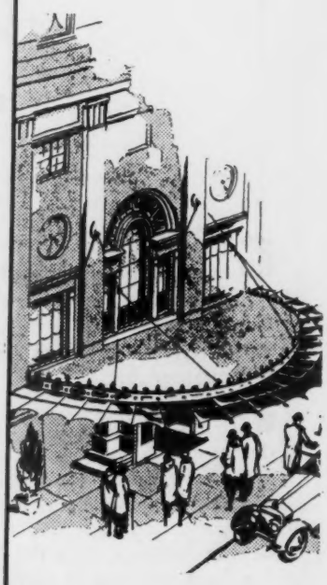
Single Room and Private Bath $3.00 Double Room with Two Beds and Private Bath $5.00

SPECIAL!

Breakfast, 75 cents; Luncheon, One Dollar; Dinner, $1.75

WALTON H. MARSHALL, *Manager*

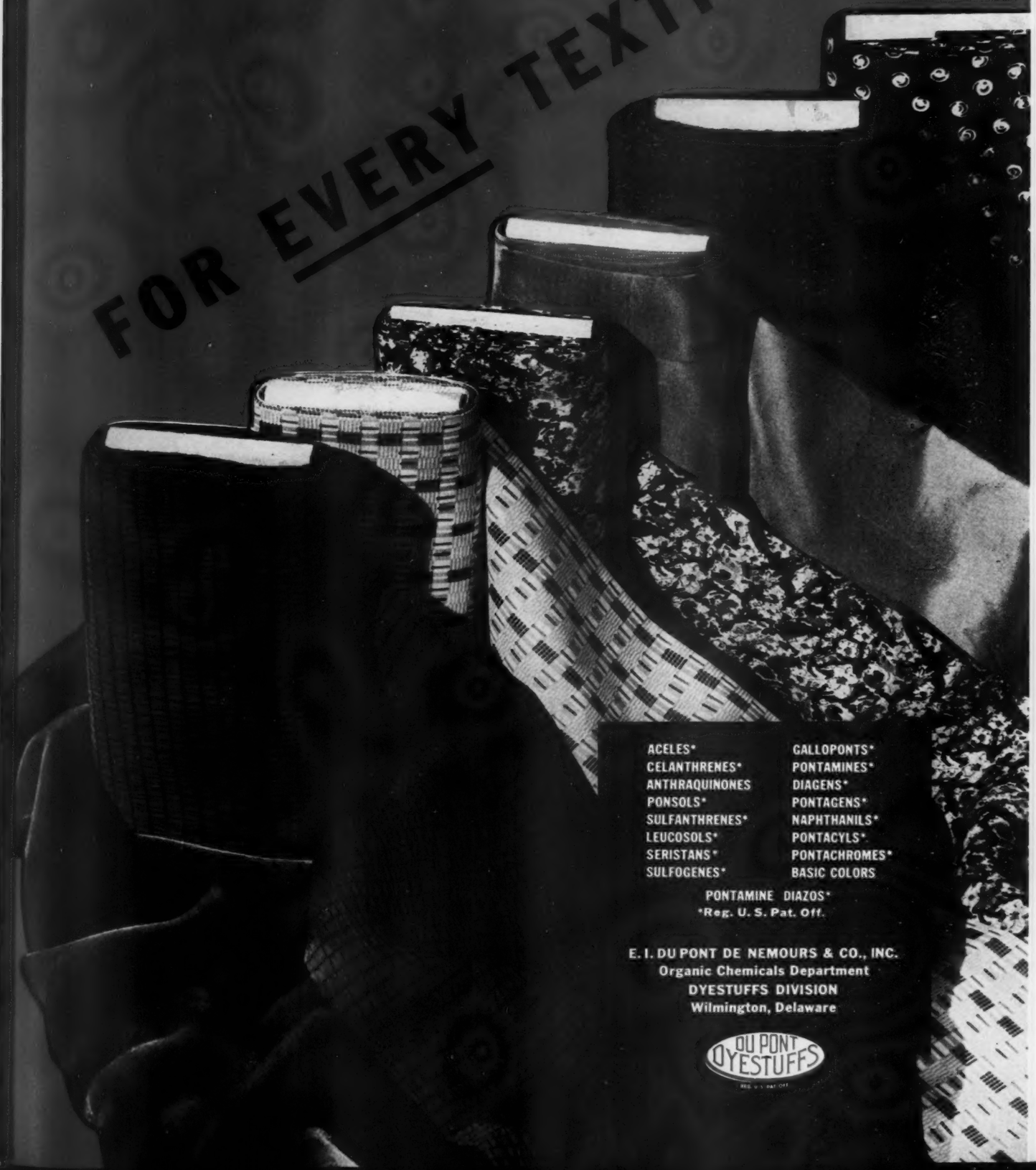
Park Avenue at Thirty-fourth St., New York.



The Della Robbia Room

There's a du Pont dye

FOR EVERY TEXTILE USE



ACELES*
CELANTHRENES*
ANTHRAQUINONES
PONSOLS*
SULFANTHRENES*
LEUCOSOLS*
SERISTANS*
SULFOGENES*
GALLOPONTS*
PONTAMINES*
DIAGENS*
PONTAGENS*
NAPHTHANILS*
PONTACYLS*
PONTACHROMES*
BASIC COLORS

PONTAMINE DIAZOS*

*Reg. U. S. Pat. Off.

E. I. DU PONT DE NEMOURS & CO., INC.
Organic Chemicals Department
DYESTUFFS DIVISION
Wilmington, Delaware

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

A Wealth of it "Made" Him
A Lack of it Destroyed Him

With the *co-operation* of his colleagues, Julius Caesar rose to the pinnacle of Roman power, but when these same colleagues felt that Caesar had grown too self-sufficient, they ceased to co-operate and stabbed him to death on the fatal Ides of March. No man is greater than his ability to obtain and use the cooperation of his fellows.

In the modern struggle for business supremacy, cooperation, or group action, is often the difference between success and failure. This is particularly true, where textile chemistry is involved, because the subject is so big and so complex, and changing so rapidly, that no one man can know it all.

CHEMICALS

Sizing and Finishing Gums and Compounds • Soluble Gums • Softeners • Soluble Oils • Tallow • Waxes • Soaps • Flour • Dextrines • Starches • Pigment Colors and Lakes • Ammonia • Acids • Blue Vitriol • Borax • Bichromate of Soda • Bichromate of Potash • Liquid Chlorine • Chloride of Lime • Caustic Soda (solid and flaked)

To assist the trade in meeting this ever present problem, this company offers an advisory service. This service is rendered, free of charge, by a staff of specially trained chemists, assisted by a completely equipped laboratory and a company experience of 120 years.

Use this service not only for new processing problems, but also to check up on the efficiency of routine methods. Write, or our representative will call, if you prefer.

Arnold, Hoffman & Co., Inc.

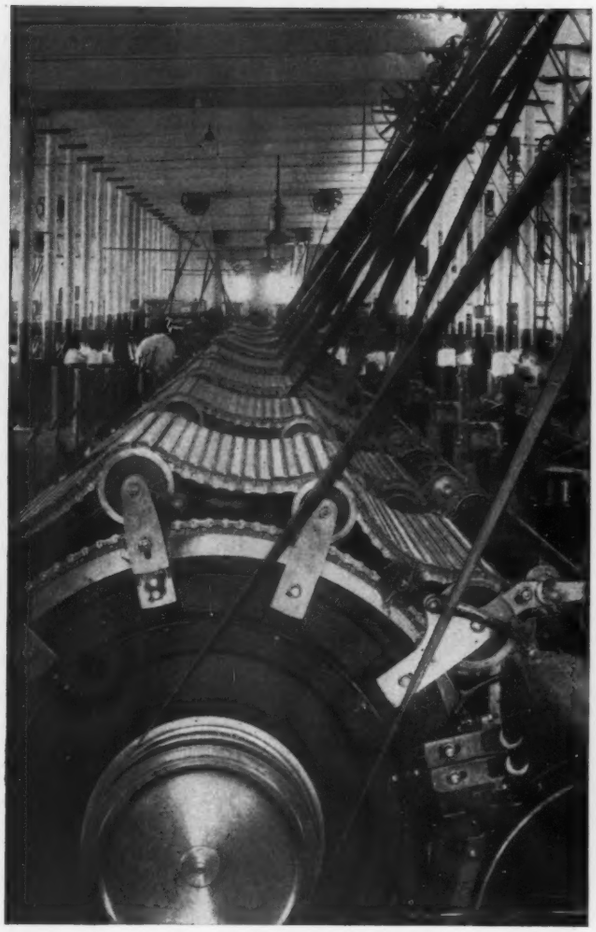
Established 1815. Plant at Dighton, Mass.

PROVIDENCE, R. I.

New York • Philadelphia • Boston • Charlotte

Reduce POWER COSTS with Challenger

SQUARE EDGE BELTING



IN FACING the drastic need for lower operating expense, manufacturers have been giving the closest scrutiny to power costs and are more critical than ever of the quality of transmission belting. The sale of Challenger Square Edge Belting has been greatly benefited by these conditions because it has successfully met the strict demands for higher and more lasting efficiency.

Challenger is a strong, powerful belt with minimized stretch and high coefficient of friction that maintains very low slippage in operation and thus continually transmits a higher percentage of power into the channels of production. Its scientific construction provides the high flexibility necessary for smooth operation over the pulleys as well as an ample degree of elasticity for reducing vibration and for protecting machinery against sudden shocks or strains. With Challenger, there is no need for frequent adjustments of tension and, therefore, long life and low maintenance costs are assured. For high speeds or heavy duty service it performs steadily and uniformly, preventing interruptions in the constant flow of power and requiring the least attention.

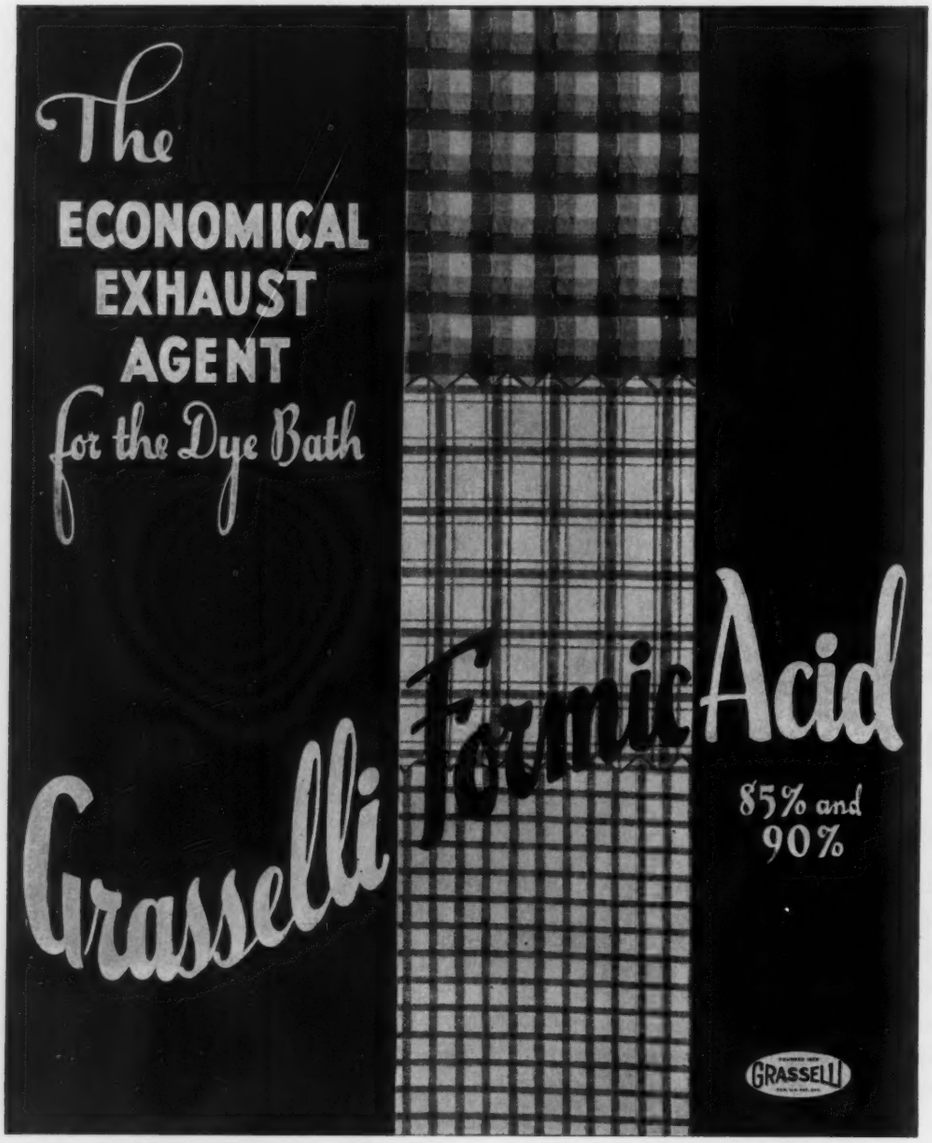
This popular belt is made in sizes and ply construction for all types of drives—in roll or cut lengths or endless to specifications. Specify Challenger on your next order for transmission belting and reduce your power costs.

NRA

THE REPUBLIC RUBBER CO. YOUNGSTOWN, OHIO

MECHANICAL RUBBER PRODUCTS FOR EVERY INDUSTRIAL REQUIREMENT

• ORDER REPUBLIC RUBBER PRODUCTS • FROM YOUR DISTRIBUTOR



● As an exhaust agent for the dye bath FORMIC ACID is more economical than other acids, all things considered. In addition, FORMIC offers several other unique advantages . . . it produces brighter shades with many of the dyestuffs . . . saves dyes, by a more complete exhaust . . . imparts no objectionable odor . . . leaves no acid residue in any material . . . used on a wide variety of fabrics. Prompt shipment in convenient 120-lb. carboys, from any of our branches listed below.

THE GRASSELLI CHEMICAL COMPANY
Founded 1839 INCORPORATED Cleveland, Ohio

New York and Export Office: 350 Fifth Avenue

ALBANY BIRMINGHAM BOSTON CHARLOTTE CHICAGO CINCINNATI DETROIT
MILWAUKEE NEW ORLEANS NEW HAVEN PHILADELPHIA PITTSBURGH ST. LOUIS ST. PAUL
SAN FRANCISCO, 584 Mission Street LOS ANGELES, 2260 East 15th Street

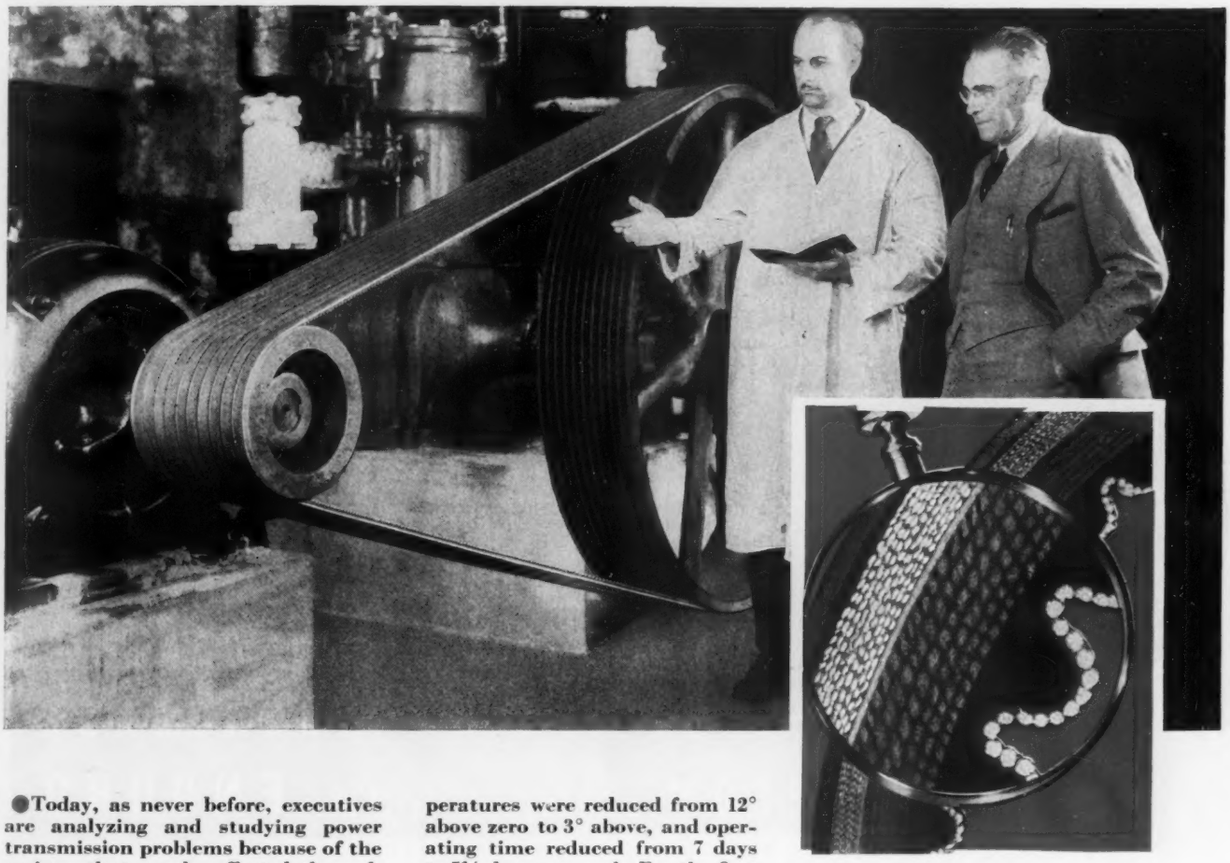
Represented in Canada by CANADIAN INDUSTRIES, LTD.
Acids and General Chemicals Division—Montreal and Toronto

LET US ALSO QUOTE YOU ON

Acetic Acid
Acetate of Soda
Acetate of Lead
Alums, U. S. P.
Aqua Ammonia
Barium Chloride
Bi-Chromate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda Solid and Flake
Chloride of Lime
Chloride of Zinc
Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
Sulphate of Alumina
Sulphate of Soda, Anhydrous
Sulphite of Soda
Sulphide of Soda
Sulphuric Acid
Tri-Sodium Phosphate

GRASSELLI GRADE
A Standard Held High for 96 Years

Turning POWER WASTES into NET PROFITS!



● *Here's the V-Belt that gives greater gripping Power with less Tension. Only Dayton V-Belts have* straight *die-cut sides that* exactly fit *the pulley grooves at all times regardless of speed or load.*

●Today, as never before, executives are analyzing and studying power transmission problems because of the savings that can be effected through the elimination of power wastes. Nowhere else can management find an equal opportunity to reduce expenses and increase net profits.

During the past seven years in thousands of industrial plants troublesome power transmission problems have been solved and real savings effected through the installation of Dayton V-Belt Drives. A production manager in a large meat packing plant said, "Our savings will total thousands of dollars a year. The short center-to-center couplings of Dayton V-Belt Drives permitted two motor-driven compressors to replace one steam compressor *in the same floor space.* Temperatures were reduced from 12° above zero to 3° above, and operating time reduced from 7 days to 5½ days per week. For the first time in 50 years no steam is required in the plant on non-operating days."

Similar savings have been made in plants of all kinds where Dayton V-Belts have been installed. Here are some of the reasons why—Dayton V-Belts are "built-to-bend." Their exclusive and patented construction makes them more flexible. They are die-cut, not molded, and accurately fit the grooves of all standard pulleys. Their rigid crosswise construction prevents distortion—there is no slipping or weaving. This means smoother running . . . positive speed . . . less tension . . . less wear on bearings. Machines last longer and there's practically no maintenance cost.

But there's much more to tell. Let us give you all the facts about the many exclusive advantages of Dayton V-Belt Drives. Wire or write today.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio
The World's Largest Manufacturers of V-Belts

Dayton
COG-BELT DRIVES

Cog-Belt Drives—F.H.P. V-Belt Drives—V-Flat Drives—Complete Drives, Pulleys and Belts in Stock. Fractional to 100 H.P.

Dyehouse TANKS • RACKS CYLINDERS

Dye racks, sticks, and tanks, too, give long, trouble-free service when made from ENDURO.

fter seventeen months of steady service, ENDURO *perforated linders in rotary dyeing machines remain free from corrosion d discoloration . . . showing absolutely no loss in weight.*

-LAST LONGER WHEN MADE FROM Stainless ENDURO

ENDURO equipment lasts longer . . . because this perfected stainless steel possesses every qualification for dyehouse service. Its stubborn resistance to corrosion enables it to defeat attack from all colors. Its smooth, stainless surface can be quickly and thoroughly cleaned when changing colors; and this smooth surface safeguards even the most delicate fibres against injury. Being strong, tough steel, it provides the wear-resistance and long life which only steel affords. It will pay you to investigate all the advantages of ENDURO for your dyehouse requirements. The facts are available. Write Republic for complete information.

ENDURO
REPUBLIC'S PERFECTED
STAINLESS STEEL
Licensed under Chemical Foundation Patents Nos. 1316817 and 1339378. ENDURO is sold only through Republic Sales Offices and Authorized Distributors

CENTRAL ALLOY DIVISION . . . MASSILLON, OHIO
REPUBLIC STEEL CORPORATION
GENERAL OFFICES R YOUNGSTOWN, OHIO

MAR -1 1935 ©CIB 252995

Vol. 99
No. 2

ROBERT W. PHILIP,
Editor

Published Monthly by
W. R. C. SMITH
PUBLISHING CO.
Dalton and Atlanta, Ga.

Who Also Publish
ELECTRICAL SOUTH
SOUTHERN HARDWARE
SOUTHERN POWER JOURNAL
SOUTHERN AUTOMOTIVE JOURNAL

Editorial and Business Offices
GRANT BUILDING
ATLANTA, GEORGIA

MEMBER OF A. B. P.
MEMBER A. B. C.

PUBLISHED MONTHLY
ANNUAL SUBSCRIPTION—$1.00
CANADA—$1.50; FOREIGN—$2.00

JOHN B. SHAW, *sales manager*, 39 Grove St., Auburndale, Mass. Boston Exchange, West Newton, 1031.
W. S. CUSHION, *vice president*, 506 The Arcade, Cleveland, Ohio.
JOHN C. COOK, *western manager*, Room 1500, 32 West Randolph St., Chicago, Ill.
W. A. McGEE, *Carolina manager*, Box 1162, Charlotte, N. C.

COTTON

Contents for FEBRUARY, 1935

General and Technical

Modernization and Maintenance—and Courage, Vision and Faith ---- 55
WISCASSETT—An Example of Yarn Mill Modernization, by C. J. Shannon and A. G. Stanford ---- 56
COOLEEMEE—Erwin Mill No. 3—A Modernized Weaving Mill, by George Wrigley ---- 63
Keeping Up-to-Date in Bleaching, Printing and Finishing Plants, by H. D. Learnard and J. C. Hipp ---- 67
A Return to Fundamental Truths Is Needed in Modernizing Our Thinking, by E. A. Terrell ---- 71
Largest Continuous Indigo Dyeing Machine Is Installed at Pepperell Mfg. Co., Lindale ---- 74
Modernization Requires Intelligent Treasurer-Superintendent Relationship (The Scavenger Roll) ---- 75
Plant Protection by Painting, by S. W. Quisenberry ---- 76
A Pictorial Visit Through Some of the Cotton Mills in Russia ---- 80
"The Moving Finger" and the Operating Executive ---- 82

How Other Men Manage

Preventing Broken Filling on Bobbin Change on Loom 111
Preparing and Testing the Size Mix ---- 112
Clogged Bolsters on Fly Frames ---- 113
Comments on Young Man's Card Room ---- 115
Suitable Slasher Cloth and Roll Weights ---- 121
Textile Booklets Worth Writing For ---- 122

Knitting Section

Modernization and Maintenance in the Knitting Plants, by R. L. P. Reifsneider ---- 125
Some SHOP TALK on Reducing Imperfects in the Knitting Room ---- 135
1935 Spring Silk Card ---- 139
Testing Dyestuff in the Laboratory ---- 139
More About the Pitch of Narrowing Machines ---- 141
The Knit Goods Markets ---- 146
Review of the Yarn Market 150

Current Textile Topics

Bureau of Labor Statistics Report on Wages, Etc. ---- 86
Sloan Analyzes FTC Report on Industry ---- 88
Talk of the Month ---- 92
Comment on the Cotton Market ---- 96
What the Southern Mills Are Doing ---- 96
New Textile Equipment and Publications ---- 98
Timely News Items With a Textile Slant ---- 102
Obituary Notices ---- 103
Personal Notes About Men You Know ---- 104
An Old-Timer Says: How About Your Opportunity? ---- 107

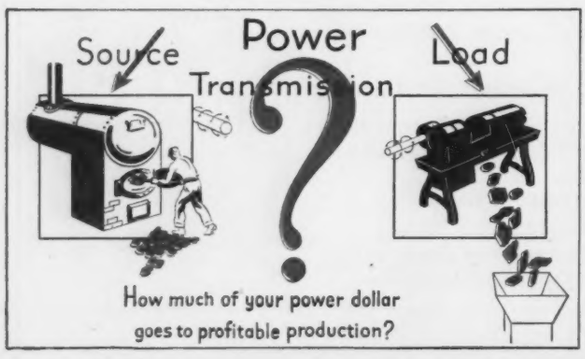
Copyright, 1935, by W. R. C. Smith Pub. Co.

You can STILL *cut cost*

IF nothing has been done about power waste

NO EXECUTIVE can truthfully say that all costs have been cut to the bone unless power waste has been eliminated throughout his plant. Authorities agree that total power costs (4% to 10% of manufacturing cost) can be reduced in the great majority of manufacturing plants—reduced all the way from 20 to 50 per cent.

If you are using the wrong system of power transmission, or obsolete transmission equipment, anywhere in your plant, your *total cost of power delivered to your production machines* can and should be reduced. Every dollar thus saved is a profit dollar.



There are two standard systems of power transmission: *Modern Group Drive* (one large motor for a group of related machines) and *Unit Drive* (individual smaller motors.) Unit Drive justifies its higher cost in many departments and plants. But where related machines can be grouped into a number of manufacturing units, Modern Group Drive with steel stringer construction and anti-friction bearings, effects large savings in investment, operating and maintenance costs.

To overlook profit leaks from power waste was excusable in 1928. To disregard them now is sheer mismanagement.

For you can *still* cut cost if nothing's been done about power waste in *your* plant. How and where is explained in simple graphs and layman's language in our now-famous Red Book, free on request. You ought to have a copy.

POWER TRANSMISSION COUNCIL
(SPONSORED BY MECHANICAL POWER ENGINEERING ASSOCIATES)

An association of producers and distributors of power, power units and mechanical equipment for the transmission of power

370 Lexington Avenue, New York

This advertisement also appears in Business Week and 4 other publications

MODERN GROUP DRIVE PTC

A POWER DOLLAR SAVED IS A PROFIT DOLLAR EARNED

With the Publishers

Mr. Hipp

Capt. Learnard

Mr. Stanford

Introducing the Cast for this Issue

Mr. Terrell

Mr. Shannon

CARL J. SHANNON (page 56)

graduate of Clemson College, B. S. T. E., 1915. Mill experience at Fairmont (S. C.) Mfg. Co., and Columbia (S. C.) Mills. Mill and engineering experience after war service. Joined Robert & Co., Inc., in 1922, promoted in 1924 to manager of the textile engineering department of this company.

A. G. STANFORD (page 56)

graduate of Clemson College, M.E. and E.E., 1914. Service in France with air corps signal section after two years as engineer with Crocker-Wheeler Electric Co. After war, joined Robert & Co., Inc., and was promoted in 1923 to manager of the electrical engineering department of this company.

H. D. LEARNARD (page 67)

trained at M. I. T., experience with cotton mills and finishing plants in New England, including Great Falls Mfg. Co., Dwight Mfg. Co., Waltham Bleachery and Pacific Mills. Since 1927, engineer of cotton mill and finishing plant, Pacific Mills, Lyman, S. C.; chairman, textile division, ASME.

J. C. HIPP (page 67)

is engineer in Spartanburg office of Lockwood Greene, Engineers, Inc., with whom he has been associated since 1916 except for time out for the World War. Prior to that date he was for three years with the U. S. Government on Port Facilities of the Panama Canal.

E. A. TERRELL (page 71)

graduate of The Citadel, Charleston, S. C. Worked for Aluminum Co. of America in construction of plant at Baden, N. C. Has since been president and treasurer, The Terrell Machine Co., Charlotte, N. C., manufacturers of equipment for the textile industry; also secretary-treasurer of Matthews Machine Co., builders of electrical signal systems for twisting machinery.

S. W. QUISENBERRY (page 76)

educated at University of Tennessee. After service in U. S. Navy during the war, entered business of paint engineering. Since 1923 has been maintenance engineer, finishes division, E. I. du Pont deNemours & Co., Atlanta, Ga., office.

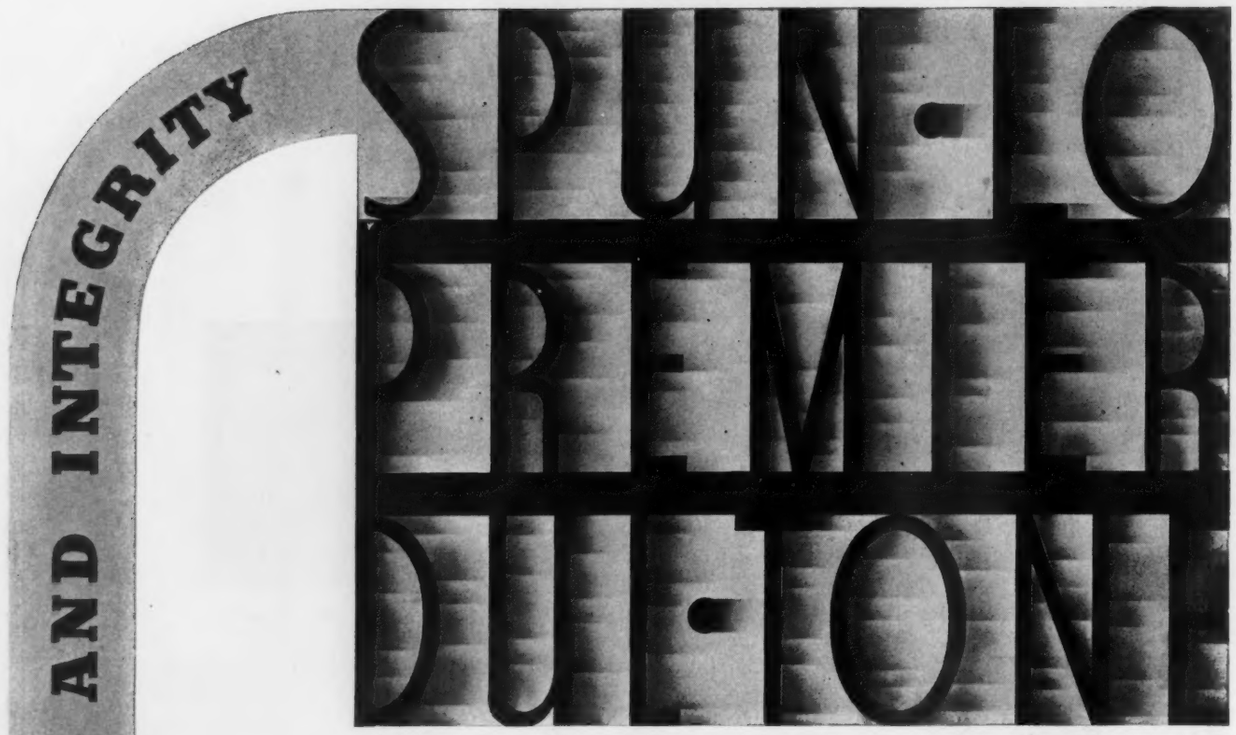
Mr. Quisenberry

AMONG the other special contributors to this issue are GEORGE WRIGLEY (page 63), engineer, with J. E. Sirrine & Co., architects and engineers, Greenville, S. C., and R. L. P. REIFSNEIDER (page 125), nationally known commentator on the knitting industry . . . . . .

Cross-Index of COTTON for 1934 Now Ready

A COMPLETE Topical Cross-Index of the articles and discussions published in COTTON during 1934 has been prepared, listing each article according to the subject or department discussed. Each listing briefly describes the article and shows the issue and page number where it may be found.

Copies of the index are available upon request to those subscribers who have retained a complete file of COTTON for 1934. A similar index covering 1935 will be available at the end of this year; all subscribers interested are urged to preserve their individual monthly copies and arrange to secure an index at the end of this year . . . Be sure you have all of your 1934 copies before requesting the Cross-Index.



These trade names identify the dependable yarns and knitted fabrics produced by Industrial Rayon Corporation. And they also stand for the sincerity and whole-hearted cooperation that go into all of INDUSTRIAL'S business dealings. ◆ ◆ SPUN-LO, PREMIER and DUL-TONE are worthy products backed by an intelligent program of Sales, Service and Trade Promotion which smooths the way of finished commodities straight through to the consumer.

INDUSTRIAL RAYON CORPORATION
9801 WALFORD AVENUE CLEVELAND, OHIO

Vol. 99
No. 2

COTTON

February,
1935

Modernization and Maintenance --and Courage, Vision and Faith

THE 1934 Modernization and Maintenance Number of COTTON carried several articles pointing out what the textile mills should do to live through the depression and put themselves on a firm foundation to bring back prosperity to themselves under the changed conditions of the times. This issue, which is also devoted to Modernization and Maintenance, carries the inspiring stories of what some prominent leaders in the textile industry *have done* to maintain that leadership. What these plants have done is typical of what many others have done, or are doing, and what others must do, or get out of business.

They are inspiring stories, for it has taken courage to do these things—courage and vision and faith. Stories of courageous leadership are always inspiring, and these people have met the challenge of the times, and have decided to go ahead, rather than stand still or go backward.

The times demand courage. Courage to make decisions and stand by them. Courage to give up a hopeless battle in some cases; to junk a worthless plant, and retire from the field while there is something left to retire with. Oftener, however, courage to take the cash that is slowly dribbling away in losses from obsolete equipment and turn it back into the plant to revitalize it before there is nothing left to do but retire with good grace, or turn the place over to the sheriff.

The times demand vision; the ability to size up the future from the experiences of the past, and to plan for that future. It takes no clairvoyant to see that there will always be a huge market for textile goods in this country. Someone must supply that market. Now is the time for manufacturers to decide whether they wish to supply part of that demand at a profit, or whether they will sit by and take what is left after the well-equipped competitor has skimmed off the cream. There is no question about the demand for goods being always with us. It may not be as large a demand as we need to keep all our mills running, but it will be large enough to yield a handsome profit to those that are well equipped to handle it. The year 1935 will mark the turning point for many a plant that simply cannot stand another year of losing money and still have enough resources to get in condition for the future. The mill which will still be running in 1940 needs to be planning for 1940 now, not simply running from day-to-day, and hand-to-mouth in 1935.

The times require faith. Faith in the fundamentals of business; faith in one's self to carry on in a business grounded on those fundamentals. No matter what politicians may do, regardless of the crackpot schemes of self-appointed economists and sociologists, we know that sooner or later the business of the nation must come back to rest upon the substantial foundation upon which successful business has always rested since before the time Solomon traded with Hiram for materials for the Temple. Almost every business man knows these fundamentals, but many have lost faith in them.

If there are too many mills, some must go out of business. If all were on an equal footing as to manufacturing costs, all would starve before a readjustment could take place. The sooner a large number of plants are in a position to make profits at what were formerly unprofitable prices, the sooner will the unfit and the misfit be forced out of the way, and a broad foundation laid for profitable returns from textile mill investments.

The stories that follow have to do with mills that were already well up in the forefront of the industry; many of their competitors would be happy to have the machinery they threw out; but the managements of these mills were not thinking in terms of today; they were planning for the future; getting ready for what is coming before they had to. Their example, and that of every other forward-looking management which has done likewise, should hearten those who know what they ought to do, have the money or the credit to do it with, but can't make up their minds.

Reprise

A year ago, one of our contributors said:

"Money in the bank is a fine thing to have, but if there is money in the bank, the plant put it there, and the plant is entitled to its share of the money for rehabilitation. The same impulse on the part of the stockholders that impelled them to invest money and build the plant in the first place should impel them to invest money which the plant has earned and build newer and better than they did before, so that the earnings may be perpetuated, for use when obsolescence comes again."

This is still a good thing to keep in mind.

WISCASSETT---An Example of Yarn Mill Modernization

By C. J. Shannon* and A. G. Stanford**

NO MORE fitting example of southern textile mill modernization could have been selected than what has been and is being done at Wiscassett. Here the authors take you through the background of this well known plant, setting up a list of principles to be considered by any mill in modernizing their property, and describing the progressive steps taken at Wiscassett in line with those principles . . . . . .

THE Wiscassett Mills of Albemarle, N. C., are thirty-six years old, which, for a southern textile industry, is considered quite mature, if not aged. The corporation was organized in 1898 by the late Mr. J. W. Cannon of Concord, as an 11,000-spindle yarn mill. Mr. Cannon was one of the pioneers and one of the great men of the southern textile industry. His spirit still lives on in the many great enterprises of which he was the founder.

This particular industry prospered, grew and expanded until in 1933 it contained 95,000 spindles on single and ply yarns, both carded and combed, from 3s to 80s. The product goes principally to the knitting trades and is sold by the Cannon Mills of Kannapolis, N. C., and New York, who also control the Wiscassett Mills. Mr. Charles A. Cannon, a son of the founder, is president of Cannon Mills, which is widely known as the foremost producer of towels in the world. In addition to this distinction, however, this corporation represents one of the best examples of both a vertical and horizontal combination in the industry, and probably forecasts the coming form of textile manufacture. The company extends vertically from the cotton bale through spinning, weaving, finishing, packaging, selling, and to the store counter, ready for the ultimate consumer. Horizontally it extends over a great many mills making a wide variety of different products including yarn and woven goods. However, that is another story, so we return to Wiscassett, one of the yarn producing units of this great combination.

In 1934 the management decided to enter upon a program of modernization of considerable magnitude. Since almost one million dollars will have been spent by the time the plan is fully completed, it constitutes, in these hard times, a major operation. The mill, from its beginning, has been so operated as to maintain a high standard of quality. It has also kept its methods and equipment abreast of the times, which so many of the older mills have failed to do. As an example of the latter policy, we recall that in 1912, the mill installed a low pressure turbine, one of the first in the Southeast. Part of the plant was at that time driven by a twin simple non-condensing Corliss engine pulling a load of 1,000 horsepower. Mr. Cannon installed the turbine to take the exhaust from this engine and use it down to a vacuum of 27 inches. The turbine produced an additional 1,000 horsepower without any additional requirement of steam or coal. In recent years this machine has been idle on account of a very economical secondary power contract, but has to date saved almost half a million dollars in power cost for the owners, and is still operated at times to maintain and continue the secondary rate.

Although the plant efficiency had been well main-

Daylight view of card room in Mill No. 2 at Wiscassett after the modernization. Compare this with night view in Mill No. 6, page 60 . .

*Mr. Shannon is manager of the textile engineering department of Robert & Company, Inc., architects and engineers, Atlanta.

**Mr. Stanford is manager of the electrical engineering department of the same company.

tained, the rapidity of growth had not permitted the retention of the best lay-out, and some of the machinery was aging. The management called in consulting engineers and in co-operation with them made a thorough study of the entire modernization program. It would take too long to detail the various steps and the reason for them, but the net results are as follows:

The plant has been divided into two groups of mills, one on combed work only, comprising mills formerly known as Nos. 1, 4 and 6; and another group known as Number Two, which produces principally carded yarn, but is also equipped to comb coarse yarns up to about one-third of its total capacity.

A daylight view of Mill No. 1 spinning room is shown above; at left, a night view of this room from same point, showing greater uniformity of artificial illumination . . . . . .

There was a further sorting out in the range of numbers spun in any one unit. In the Number One Division, Mill No. 4 produces the finest numbers in a range from 40s to 80s; next comes No. 6, from 24s to 45s; and last, No. 1, from 12s to 32s. In the Number Two Division, the mills formerly known as 2, 3, 5 and 8 have been combined into one, which spins from 3s to 30s, principally carded. While this arrangement permits a separation and the use of one mix per unit, there is still enough overlap to give a desirable degree of flexibility. Each of the four present mills has its own opener room, picker room, and its own finishing. The plat plan accompanying this article (on page 59) shows the general arrangement. The present spindleage is as follows:

Mill No. 4	18,240
Mill No. 6	20,688
Mill No. 1	23,184
Division No. 1	62,112
Division No. 2	27,936
Total Spindles	90,048

It is to be noted that the total was shrunk from 95,000 to about 90,000 spindles. Such reductions are good for the general industry. It is quite vital that all the advantages of four medium sized separate units should be retained while the overhead is reduced by having them grouped into a large plant with one management.

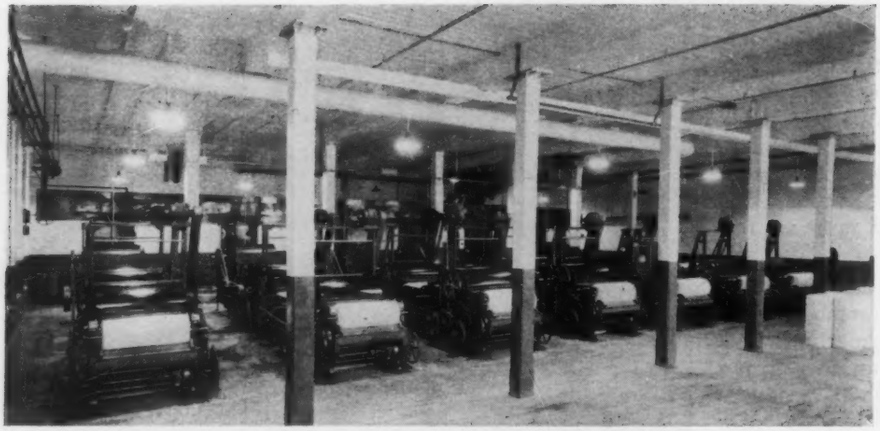
There are certain general principles to be followed in any plan of revamping, but no two cases are exactly alike, and these principles must be modified in practice to suit the particular local conditions.

Among these general conditions are the following:—

I. It is wise to buy the best machinery available, since it is the cheapest in the long run.
II. It is undesirable to build new buildings.
III. It is important to have the subsidiary services provide the best possible operating conditions. This refers to such matters as motor drives, lighting, humidity, heating, cleaning, etc.
IV. Getting the best arrangement is worth a great deal of study. In this category, we have such matters as straight forward travel, ample space for storage of bobbins, stock in transit, etc., the proper width of alleys and other considerations.
V. The human factor should have its share of planning, involving proper ventilation, drinking water supply, clean toilets, besides the subsidiary features already mentioned.

We might see how closely this plant comes to fulfilling those requirements outlined above.

As to machinery, 152 new spinning frames, each with 252 spindles, made by the Whitin Machine Works, have been installed. These are wide gauge and equipped with long draft. A large number of new Foster winders were purchased. The pickers



The re-vamped picker room in Mill No. 1, showing condenser and distributor in the background .

were put together to form one-process machines. A considerable amount of new opening machinery was installed. Since most of the remainder of the machinery was in first-class condition, the mill now has very fine equipment.

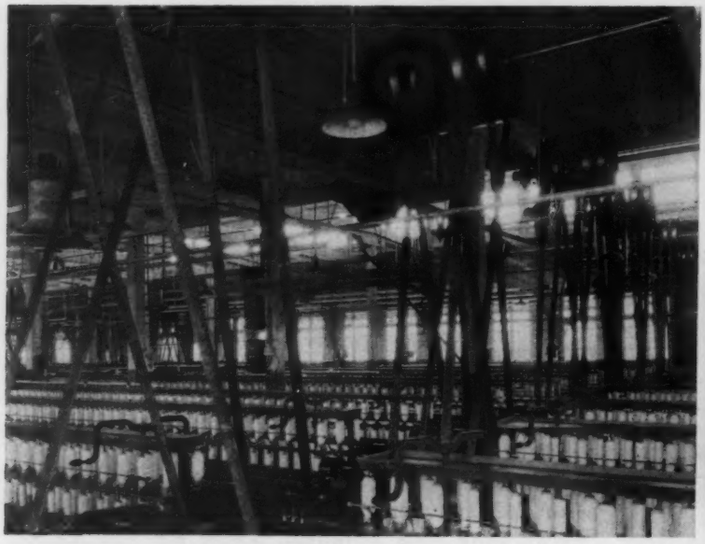
No new buildings were constructed, but the No. 2 Mill was joined to the No. 3, thus removing two unnecessary brick walls and gaining a space of 23 feet for the full width of the mill. An old engine belt race was removed in the No. 1 Mill, several "cubby holes" were removed, and considerable re-flooring done. It is always advantageous to get rid of as many division walls as possible, leaving the floor space clear and connected.

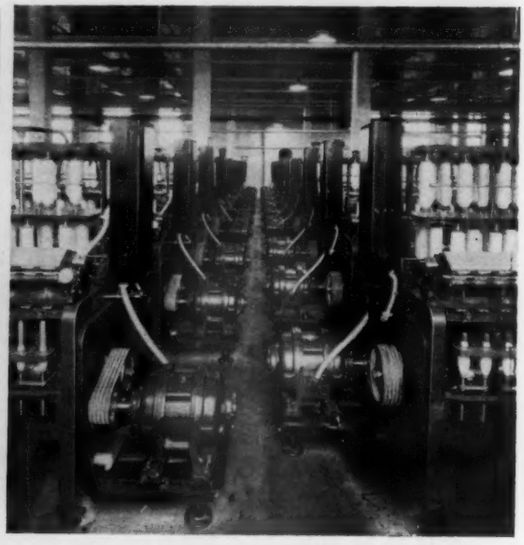
Under Item III in the list of principles, many interesting things were accomplished. Most of them are of an electrical nature and are described under that heading. It might be well to mention here that at the beginning of the work the mill contained motors of three voltages, 220, 550 and 2,300 volts. All this has been standardized at 550. The wiring, which was largely open work, has been replaced by conduit. Instead of a multiplicity of services, there are now only two substations.

All of the mills have been completely re-lighted with a most efficient system of modern illumination with intensities in keeping with best modern practice, and providing excellent conditions for night operation, as shown in the accompanying photographs.

New high duty humidifier heads were placed over the spinning, and the older heads re-located to strengthen the conditions in other departments. The valves controlling the heads have been lowered to a position where they are easily accessible for inspection or repair, a detail which may be of more value than appears on the surface.

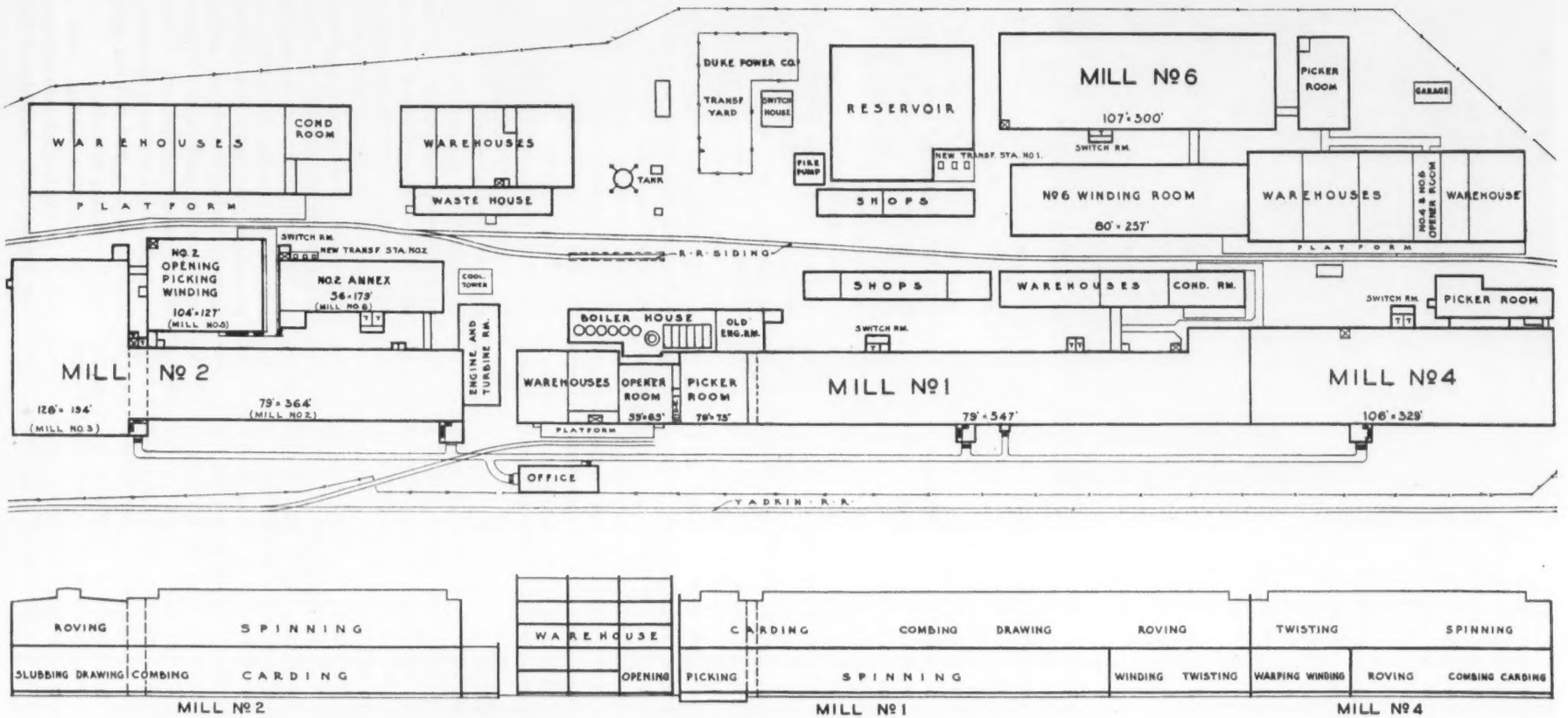
In the matter of machinery arrangement (which is numbered IV in our statement of principles), it was necessary to make some compromises to avoid the construction of new floor space. All engineering, however, is a compromise between the ideal and the practical, and we think a satisfactory result has been obtained. Mills No. 4 and No. 6 were left substantially as they were. All others were revamped. In Mill No. 1, the picker room was placed on the first floor to make room for cards above. The laps go up an elevator to the second floor. The second floor contains all processes through fine frames. This gives a straight line of travel of work. The bobbins go down an elevator to spinning, which is at the





Left, a view in the belt-driven spinning room in Mill No. 1 before modernization; right, an alley in the same spinning room, now individually motor-driven, after modernization . . . . . .

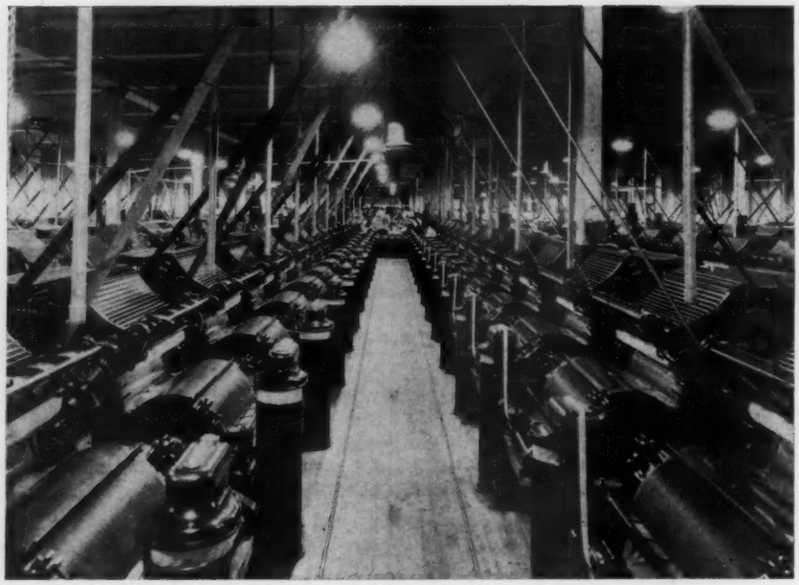
Plat Plan of Wiscassett Mills, Showing Arrangement of Units After Re-Organization and Modernization



The above plat plan and section view of Wiscassett Mills showing the arrangement of the units in the group will enable the reader to understand the changes made and also to follow the progress of the stock through the different mills, as explained in the article. The former mill numbers are shown here in small letters, in parentheses, and the new mill numbers are in larger letters. Thus, as the article explains, former (Mill No. 2), (Mill No. 3), (Mill No. 5) and (Mill No. 8), have become MILL NO. 2, and may be termed DIVISION NO. 2, at the left; whereas DIVISION NO. 1 is composed of three separate units, still known as MILL NO. 1, MILL NO. 4, and MILL NO. 6 . . . . . .

south end of the first floor. It is necessary for the spun yarn to return to the north end for winding, reeling, twisting, or warping, as the case may be. Considering that this mill is only 75 feet wide, a good lay-out has been obtained.

As previously noted, the 2, 3, 5 and 8 mills have all been thrown into one, now known as No. 2. The picker room is located in the old No. 5, the laps go to the cards on the first floor of No. No. 1, thence to roving frames in No. 3, including intermediates, thence up an elevator to the fine frames in the east end of No. 3. The spinning is on the second floors of No. 2 and No. 8, both of which feed into the winder room of No. 5. By reference to the plat plan it will be seen that while this provides a straight forward flow of goods with no backtracking, it is not a straight line flow. In reality, yarn moves in a clockwise circle on the first floor, up an elevator to the second floor and in a counter-clockwise circle back to the winding. Part of the finishing operations are on the third floor of No. 5, which is the only three-story mill on the premises, and part, the warping, in the west end of the second floor of No. 3. The latter is cut off by a partition from the speeders, and connected by a passage to No. 5. A large bin storage for bobbins is provided on the second floor of No. 3, between the partition and the speeders.



Night view of card room in Mill No. 6. Compare this with day view of similar card room, page 56 . . . . . .

Ample alleys have been provided and there is plenty of "parking space" between processes for spare stock. The new arrangement is a great improvement over the old with its several separate buildings. The new machinery and drives, together with painting, have given it the appearance of a new mill. This will have its effect in helping to induce the operatives to keep everything spotlessly clean.

Textile Machinery:

The opening rooms for Mills No. 1 and No. 2 were rearranged to provide space for a mix of 80 to 100 bales of cotton. Blending feeders were installed in the ratio of one feeder for each picker plus an extra feeder for re-worked waste stock. The cotton is delivered by the feeders in small tufts onto a lattice feed table which, in turn, conveys it to the opening and cleaning machines, thence to the picker room through a conveyor pipe and condenser.

The picker rooms were completely rearranged and all pickers have been converted into one process machines by the latest Saco-Lowell method. The pickers in Mill No. 1 have been in operation for about a year now and each unit consists of a primary feeder, a two-beater breaker section and finisher section with standard synchronizing apparatus installed between the two sections. Stock is delivered to the feeders by a rake distributor which maintains a constant level of cotton in the feeders at all times, a primary requisite for producing even laps. The distributor is equipped with automatic electric feed control apparatus to regulate the supply of cotton delivered by the opening equipment to the demands of the pickers.

The openers and pickers for Mill No. 2 are combined in one large room affording excellent opportunity for controlled atmospheric conditions in the preparatory process. The opening and blending equipment has been provided to better prepare the stock for carded yarns.

The equipment is arranged in two units to permit processing two different types and mixtures of cotton simultaneously.

In converting the pickers in this mill to one-process, the primary feeders have been eliminated and the Saco-Lowell automatic control feeding system has been supplied. This consists of the rake distributor, chutes with press rolls and feed apron and the rakes and mercury switch for connecting to the electric control motor located in the opener room. In addition to the automatic feeding control system each picker unit consists of a two-beater breaker section, a one-beater finisher section, and a blending reserve, which is installed between the breaker and finisher section to supplant the usual synchronizing apparatus or intermediate feeder, generally used with one process pickers.

No additional cards were installed, as these mills have always believed in light carding and the modernization program did not alter this phase of their manufacturing operation. However, any cards which were not in perfect condition were reclothed and otherwise overhauled.

Some 12 additional combers were installed in Mill No. 1 to round out the equipment and improve quality in this process.

The drawing frames were thoroughly reconditioned by the installation of new rolls and new gearing throughout. Additional frames were installed

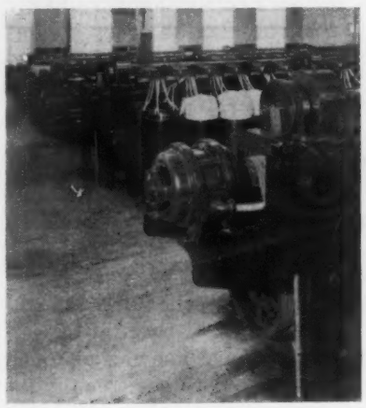
to permit a reduction in roll speeds to deliver at the rate of about 100 feet per minute.

A major portion of the old roving equipment in these two units was replaced with modern machines and that which was retained was thoroughly reconditioned so that its efficiency and usefulness is now considered equal to new equipment.

The spinning equipment in Mill No. 1 originally consisted of 96 2¾-inch gauge frames of 240 spindles each. These were replaced with 92 new 3¾-inch gauge long draft frames of 252 spindles each.

Mill No. 2 originally contained 96 2¾-inch gauge frames of 240 spindles each, 12 3¾-inch gauge frames of 204 spindles each, 30 4-inch gauge frames of 216 spindles each, and 12 4-inch gauge frames of 240 spindles each. The 2¾-inch gauge frames were replaced by 60 new 3¾-inch gauge long draft frames of 252 spindles each, the 204-spindle frames were lengthened to 252 spindles to match the new frames, while all of the 4-inch gauge frames, which were installed only a few years ago, were retained in the new lay-out. Two new 216-spindle, 4-inch gauge frames were installed in a gap caused by the rearrangement. It will be noted that the spindleage of this plant was reduced by 6,912 spindles.

The new frames are the latest word in ring spinning and represent many improvements and refinements in design and workmanship over spinning built a few years ago. All new frames are identical



Modern type of individual drive for drawing frames—at Wiscassett . . .

in design and specifications, save two 4-inch gauge frames which will, however, match the other frames. Specifications on the new frames are as follows: Spindles per frame, 252; gauge, 3¾-inch; rings, 1¾-inch and 2-inch; rails, bored 2¼-inch; traverse, 7¼-inch; spindles, medium gravity; tape drive, filling wind, Saco-Lowell Roth long draft; ball-bearing cylinders, traversing thread boards, no separators.

All existing frames which were retained in Mill No. 2 were equipped with long draft to conform to the new frames. The long draft equipment in Mills No. 1 and No. 2 represents 51,120 spindles which is one of the largest installations of long-draft in any mill whose product is principally hosiery yarns.

Prior to the modernization program, the winding equipment in Mill No. 1 comprised 18 Foster No. 30 cone winders. These were replaced with 10 Foster No. 102 cone winders of 100 spindles each. Winding equipment in Mill No. 2 consisted of 2 Foster No. 101, 2 No. 102, and 22 Foster No. 30 winders. The No. 101 and 102 and 4 No. 30s were retained; 18 No. 30s were replaced with 12 No. 102s.

These mills have the necessary winding, warping, reeling and other finishing equipment to satisfy the demands of all customers as to the put-up of their yarns.

An item of prime importance in the modernization of these mills, the object of which was to improve manufacturing conditions and quality of production, was the installation of the Firth-Smith type of automatic bunchless cleaning equipment over all spinning and winding throughout the several units.

Electrical Services:

Under the former power contracts Mills No. 1, No. 6 and No. 8 were supplied on primary contracts and Nos. 2, 3, 4 and 5 were on secondary contracts. By agreement with the Duke Power Company, Mills No.

An efficient winder room in an old building . . .

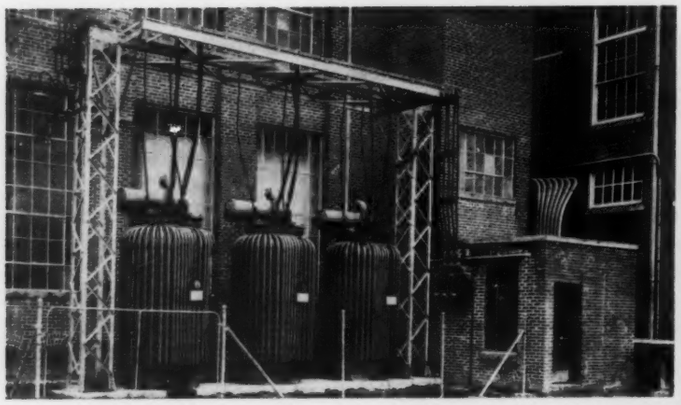
4 and No. 8 were reversed as to their power contract classification, thus enabling all seven mills to be conveniently divided into two power groups for economical service from two new substations, each with an installed transformer capacity of 3,000 k.v.a.

The power supply for all mills is now 575 volts, whereas formerly Mill No. 1, most of No. 2 and No. 4 were driven by 2200-volt motors; part of Mill No. 2 and all of Mills No. 6 and 8, by 550-volt motors, and Mills No. 3 and 5 by 220-volt motors. It will thus be seen that the two new substations previously mentioned have replaced three 2300-volt services and three smaller substations.

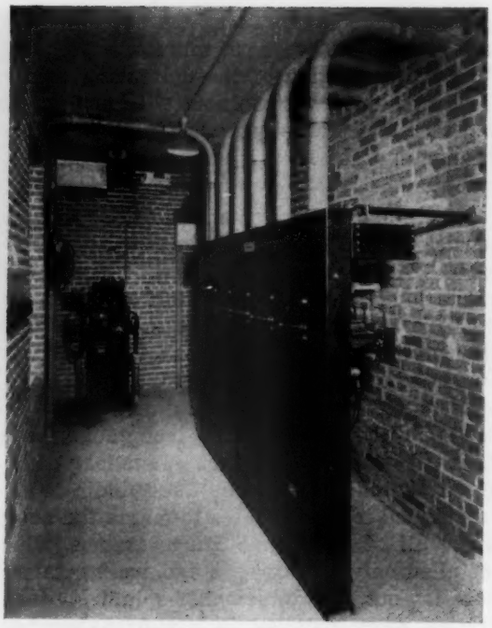
The elimination of the 2200-volt motors will result in a reduction in maintenance expense and shutdown losses since considerable trouble has been experienced in the past with these motors, due to burnouts caused by lightning and other high voltage surges.

New switchboard rooms were constructed for Mill No. 1 and the new No. 2 Mill, while the old switchboard rooms were utilized for Mills No. 4 and 6.

Four complete new switchgear equipments were installed. These consist of deion air circuit breakers mounted on steel panels. One set of potential terminals was provided to permit the use of a portable graphic voltmeter for checking voltage conditions at each mill. As an innovation all panels were con-



A neat 3,000-kva substation at Wiscassett. Exterior of switchboard room on right . . . . . .



Interior view of switchboard room . . .

structed with a 6-inch gutter on the sides and top which reduced the installation cost and materially simplified the manner of terminating the power feeder at each circuit breaker. The simplicity of the switchgear is clearly shown in the accompanying photograph of the No. 1 Mill switchboard room.

For all new spinning frames 10-hp. ball-bearing, lint free motors were installed with v-belt drives. Similar drives were installed for all card room countershafts in Mills No. 1 and No. 2. Four-frame drive motors were used for all combers and roving.

Improved Lighting System:

After considerable study of all modern lighting equipment, a decision in favor of R.L.M. standard dome reflectors was made, using rigid pipe stems and swivel ceiling outlet fittings. Foot-candle intensities vary from about 4.5 for carding to 9.5 for spinning and winding. It is of interest to note that lights were provided in the roving back wall alleys to facilitate the inspection operations.

Prior to the installation of the new lighting system it was impossible for these mills to carry on night operation and maintain the required quality. This situation no longer exists and from the day and night photographs taken in Mill No. 1 spinning room it will be seen that better and more uniform illumination is obtained with the artificial light. Four induction feeder voltage regulators were installed, one in each switchboard room, to provide regulated voltage for all lights and humidifier head motors, thus insuring a minimum replacement and maintenance expense. A combined system of watchman's lights and red signal lights has been installed using magnetic contactors in each mill and a master push button control in the boiler room. New bracket lights for entrance and yard lighting were installed and are controlled with the watchman's lights.

All new motors and controls for Mill No. 1 and the spinning motors and all controls for new No. 2 Mill were supplied by the General Electric Company. The balance of the new motors for new No. 2 Mill and all new switch gear equipment was supplied by the Westinghouse Electric and Mfg. Company.

The lighting wiring for No. 4 and No. 6 Mills was installed by J. M. Clayton Company, of Atlanta, and the lighting wiring for the other units, together with all power wiring was installed by Huntington and Guerry, Inc., Greenville, S. C.

Maintenance of Quality:

Not satisfied with the high reputation for quality already attained, this company has, in every step of the modernization program, kept in view a still higher attainment. For instance, the long draft on spinning has been used primarily for improved quality instead of reduction in preliminary processes. Speeds have not been unduly increased. Details too numerous to catalog have been carefully worked out, such as the chromium plating of sheet metal work on drawing and roving frames.

Beyond those factors contributed by the machine installation the mill has set up a schedule of cleaning which is unusual and it goes further in inspecting than others of which we have knowledge. Even the back alleys of roving frames are periodically inspected to locate and remove any bobbin with inferior or dirt-spotted yarn. All ceilings are brushed down twice a day when shifts are changed and machines stopped. All floors are swept at the same time.

The meticulous care in these and many other similar matters must be credited to Captain T. M. Denning, who is a strong believer in the old adage that "trifles make perfection but perfection is no trifle." Captain Denning, general manager of the Wiscassett Mills, came with the organization in 1900 after it had been in operation only one year. Mr. J. A. Groves, treasurer of this plant, and also of the Wiscassett knitting department, took office in 1903.

A great majority of the help is of the second generation of those who worked in the plant when Mr. Groves and Captain Denning arrived. There is practically no labor turn-over. This stable condition of help and management has been a large factor in the continuous success of the enterprise and its maintenance of a high quality standard.

COOLEEMEE--Erwin Mill No. 3-- a Modernized Weaving Mill

By George Wrigley*

THIS is the kind of discussion that gives the reader the facts, and furnishes him something definite to apply to his own problems. This factual description of the physical changes wrought in the modernization of a plant in one of the South's outstanding mill groups tells in detail what was done, how it was done, and pictures the result . .

ADEQUATE modernization and maintenance of its plants is a major management policy of the Erwin Cotton Mills Company, with executive offices in Durham, N. C., and six plants located there and in other North Carolina towns. This organization, which operates a total of 210,748 spindles and 5,476 looms, with a large bleachery and finishing plant, has, since its organization by the late Mr. W. A. Erwin and associates in the year 1892, experienced a steady, substantial growth from a small beginning to its present position as one of the industry's outstanding groups. The several plants of the company produce an extensive, diversified line of products, including sheetings, sheets and pillow cases, denims, suitings, cottonades, flannelettes, tickings, etc.

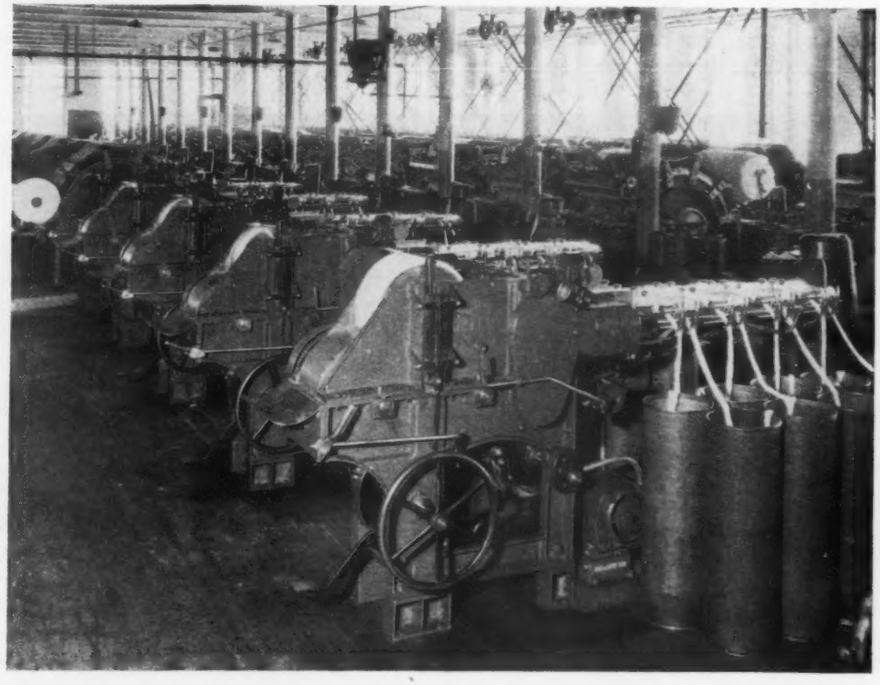
The organization has grown through the erection of new mills and the acquisition and improvement of existing properties. An example of the company's consistent policy of efficient management was, in the acquisition several years ago of the property now known as Mill No. 6 in Durham, the plant was completely transformed into an up-to-date efficient unit by installation of modern equipment, revamping of that worthy of retention, and re-organization and improvement of the entire manufacturing equipment.

A recent further example is the program of machinery reorganization and replacement which has just been concluded at the company's Mill No. 3 at Cooleemee, N. C. Because the modernization work at this plant is current, because it is representative of the possibilities available in the industry and indicates the opportunities for progressive management, we present here, through permission of the Erwin management, a detailed description of this work.

Buildings

The original mill was built and put in operation in 1899. In 1908 an addition to the main mill was completed. A raw stock dye house, new picker build-

*With J. E. Sirrine & Company, architects and engineers, Greenville, S. C.



A group of the new sliver lap machines with which the Cooleemee plant of Erwin Cotton Mills Company is equipped. These machines produce sliver laps which go to the drawing frames . . . .

ing, and a cloth building have since been added. The plant manufactures a wide variety of fabrics, including outings, ticking and suitings.

The main building is three stories high and 575 feet long overall, 435 feet 6 inches of this being 104 feet wide, and 139 feet 6 inches, is 108 feet 6 inches wide. The bays are 8 feet wide.

All spinning machinery is on the third floor, the carding machinery on the second, and the looms on the first and a small section of the second floor.

The picker building is three stories, reinforced concrete construction, and houses the machine shop, beam dyeing, slashers, spoolers and warpers, and the pickers.

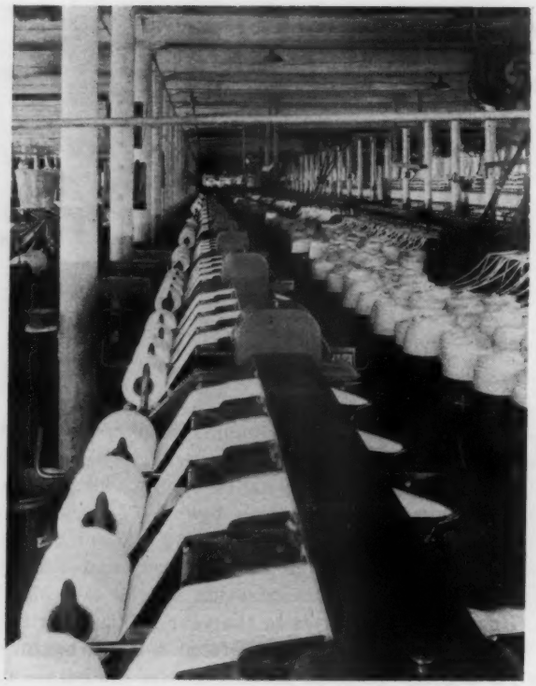
Power

Three sources of partial power supply have been in use, the water power plant, the steam power plant, and purchased electric service. Mechanical drives transmitted the power from the water wheels and engine, through ropes in two main ropeways. Motors were used exclusively for driving some of the spinning frames, and other motors, as needed, for supplementing the mechanical drives in this and other departments, the loads being shifted by clutches from one source to the other.

The management, having decided that replacement of some of the machinery equipment was economically advisable, proceeded to carry out this policy, based on plans which contemplated the several problems involved.

When the replacement program was first studied, preliminary sketches showed that on account of the structural arrangements of the main buildings, several different lengths of spinning frames would be required, considerable space wasted and movement of stock obstructed on all three floors. It therefore became desirable to remove a partition wall, the ropeways, the elevators, and other obstructions. These removals were found to be feasible and practicable, and when carried out resulted in far better installation and operating conditions.

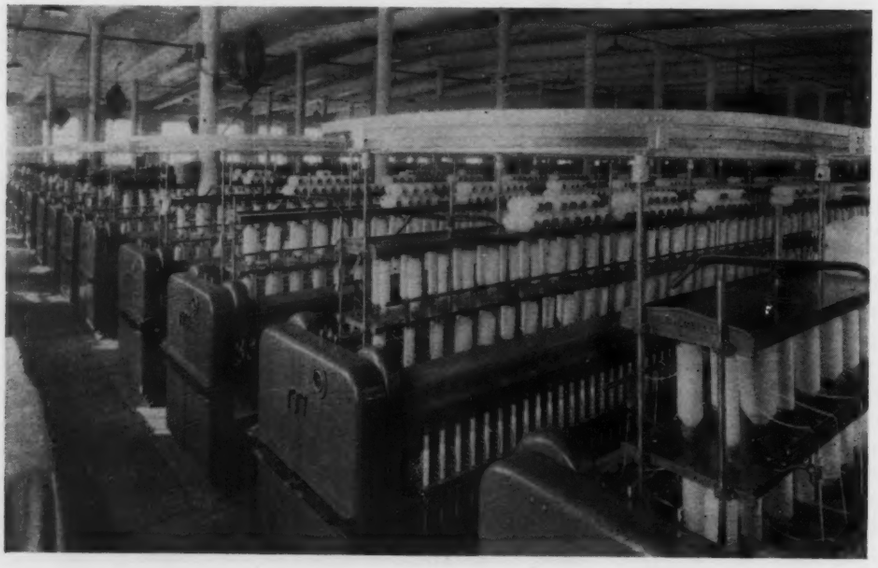
The steam power plant contained a cross compound Corliss engine supplied with steam from three water-tube boilers and operated condensing.



The drawing frames, which receive the sliver laps from the preceding machines . . .

It was found that at the prevailing prices of coal and purchased power, the supplementary power supply could be purchased more cheaply than it could be generated by steam. The steam power equipment was nearing the end of its physical life and since its elimination would also allow the removal of the ropeway and liberate the engine room for needed storage space, it was decided to shut down and remove the engine and its drive.

The removal of the water power plant ropeway was made possible by placing a generator in the machine shop area on the first floor of the picker build-



A general view in the Cooleemee spinning room, showing the new warp frames equipped with traveling overhead cleaners . . . . .

ing, and driving it by ropes. A suitable, used generator was obtained at a low cost and installed for temporary service, pending the proper modernization of the water power plant.

A modern switchgear equipment with operating panels was installed in the machine shop to control the incoming line, generator and feeder circuits.

Spinning

In order to meet the demands for the many varieties of yarns needed, it was necessary to make the arrangement of plant and equipment as flexible as possible so that changes could be rapidly made. These provisions had to take care of seven different warp numbers ranging from 8s to 30s, 20 different filling numbers, from 3½s to 22s, and a great variety of colors, blends and mock twists.

Warp frame, foot end, showing motor, control, and Rockwood drive . . . . . .

The old spinning was all removed and new, large package, long draft frames installed. They are tape drive, metallic traversing threadboards, and arranged for combination and filling wind. All top rolls are cork-covered. Creels are arranged to take 12x6-inch bobbins, when running single, or 9x4½-inch bobbins with double roving. The cylinders run in ball bearings and the spindles are No. 3A plain McMullen with large oil bases. All frames are fitted with safety doors. Travelling cleaners are installed over all spinning frames.

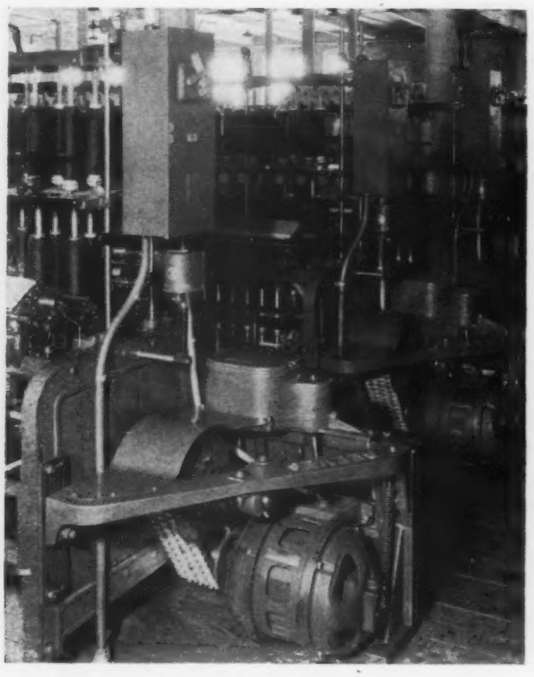
There are 87 warp frames, each with 264 spindles, 3¾-inch gauge, and with separators. The ring rails are bored for 2½-inch rings but at present are equipped with 2¼-inch, 2-inch, and 1⅞-inch rings. The warp frames are 43 feet long, 38 inches wide.

Each warp frame is driven by a 10-hp., 1,800 r.p.m. motor through a Rockwood drive with leather belt. The motor bases are mounted on the floor. Combination magnetic switches and shipper-rod-operated master switches are used to control the motors. Several sizes of spare pulleys provide means of changing speeds.

The filling frames are 276 spindles each, 3-inch gauge, and without separators. All 62 of these frames have 1½-inch rings but the ring rails are bored for 2-inch. They are fitted with clutch spindles and bunch builders.

Reeves automatically or manually adjustable drives with 7½-hp., 1,200 r.p.m. motors are used for all filling frames. Filling frames are 36 feet 3⅜ inches long overall, and also 38 inches wide.

All warp frames are installed in the south section and all filling in the north section of the mill.



Filling frame, foot end, showing motor, control and Reeves drive . . . . . .

Two Barber-Colman spoolers and warpers were installed in the spooler room in 1932. During this recent change, the spoolers were modified to take the long bobbins from the new spinning frames.

Card Room Equipment

Eleven new sliver lap machines are installed in two groups between the cards and the new drawing frames. They run 16 card slivers into a single lap and produce 235 pounds per hour each, are equipped with electric stop motions and are each driven by a 2-hp., 1,200 r.p.m. motor through a Rockwood drive.

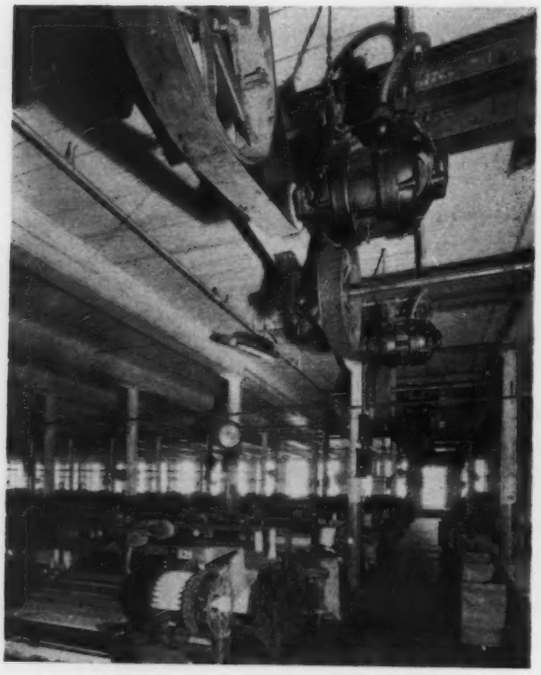
There are eleven controlled draft drawing frames with four heads each and a total of 176 deliveries, producing 14½ pounds per hour, per delivery. Each frame is driven by a 5-hp., 1,200 r.p.m. motor.

The cards were equipped with vacuum strippers prior to this replacement program.

In the original arrangement, there were 28 slubbers, 48 intermediates, and 16 roving frames, a total of 92 machines in two and three processes of roving.

In the re-organization, the weights and drafts were changed, some intermediate frames changed to slubbers to produce finer roving directly from the drawing sliver and most of the roving frames discarded. Only 32 slubbers, 20 intermediates and 3 roving frames, a total of 55 machines, were retained, using two processes of roving for the various yarns. This was a reduction of 37 frames or 40 per cent of the fly frames. The roving frames and some of the intermediates were left installed for occasional use to make double roving for mock twist. Most of the yarns are made from single roving.

The speeds of the card room frames were adjusted to enable them to run with less twist and secure higher production.



Group drives for belt driven looms, showing motors and Rockwood drives . . . .

The cards are installed in three lines running the length of the room and their product is delivered to the lap machines, from them to the drawing frames, and thence to the fly frames, moving across the mill.

Larger motors removed from the spinning room are used to drive groups of card room machinery.

Weave Room

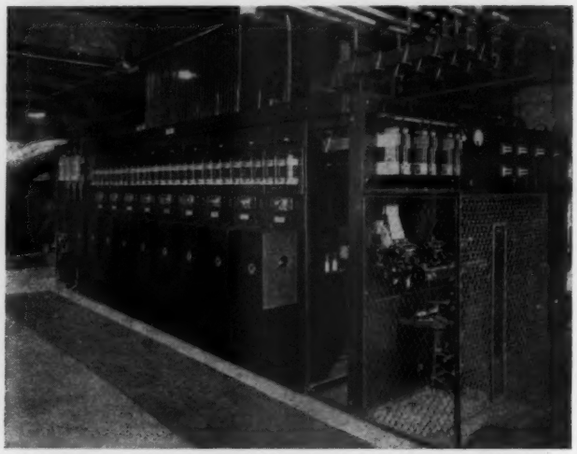
The weave rooms were rearranged to group all similar looms together. The additional floor space, provided by removal of the obstructions, made this possible and allowed bringing together the looms from five rooms and concentrating them in two rooms only. Many of the looms were changed to individual motor drive, some of the older ones still being belt and shafting driven from moderate size group motors with the motor connected by a ceiling-mounted Rockwood drive to each line of shafting. The group driving motors were formerly four-frame spinning type, and were removed from the top floor ceiling, their shafts cut off and fitted with proper size pulleys. The looms were spaced for the longer filling bobbins.

The picker room is at the same level of and connected by a passageway to the card room. The mechanical drive in this room was replaced completely with individual motors mounted on the A-frames of the machines. During this change, sections of the old pickers were removed to simplify the machines and to give specific results that were wanted.

The spinning and card room machinery was furnished by the Saco-Lowell Shops. The new motors, their control, and the switchgear, by the Westinghouse Electric and Manufacturing Company; the travelling cleaners by the Parks-Cramer Company. The generator was made by the General Electric Company.

The elevators have been re-located and installed in portions of what were formerly sections of the old ropeway and engine room.

The partition wall which obstructed all three floors has been replaced by a sash partition on one floor only, separating the card room from the small weave room.



The new switchgear at Cooleemee . . .

The card room changes give a better lay-out with fewer machines, making easier operation, a reduction in power consumption, repairs and supplies, and the production of better roving that makes better yarn. Larger packages are carried to the spinning room, reducing the amount of creeling in that department. All card room machinery is now in one large room on one floor, instead of two rooms on two floors as originally installed.

The re-arrangement and new groupings of machines not only facilitated supervision, but gave desirable space for storage purposes. Due to the necessarily wide variety of yarns made, it is necessary temporarily to store considerable quantities of roving. Storage building extensions had been contemplated but this expense was obviated by the release of the two former small rooms in the picker building, a considerable space in the spinning room formerly occupied by roving frames, and the engine room.

All changes in buildings, power arrangements and machinery equipment were made without major interruption of production.

Keeping Up-to-Date in Bleaching Printing and Finishing Plants

By H. D. Learnard* and J. C. Hipp**

CAPTAIN Learnard and Mr. Hipp, out of their joint experience in the modernization of the Pacific Mills bleachery, finishing plant and print works, have given here, in a brief, well-written article, a review of what has been made available and utilized for modernizing and maintaining at best efficiency plants within this important division of the textile industry . . . . . .

THE manufacturing efficiency of existing plants can be maintained at a high level only by constantly improving the equipment and processes. These improvements do not necessarily call for a large outlay of capital as they are for the most part in the nature of minor changes in machines and processes. Plants that have been built only a few years, as well as older ones, have found it worth while to make such changes.

Improvements for Singeing

Butane gas is now available for cloth singeing. It is a petroleum product and is handled as a liquid under pressure. The boiling point is 107 degrees F. and it has a vapor pressure of 70 pounds at 95 degrees F. By the application of heat through steam coils and thermostatic controls the liquid may be converted to gas and maintained at any desired pressure within reasonable limits. The gas has a high B.T.U. content and when mixed with air in the usual industrial carburetor is ready for use. The generating equipment is simple and economical to operate and maintain, and the cost of gas per B.T.U. of flame is, in most cases, lower than other gases.

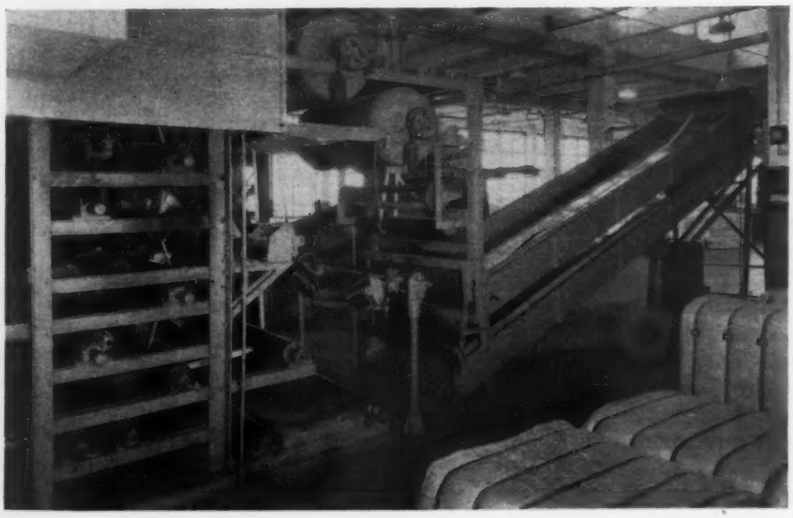
The introduction of high compression burners on singers has made it possible to run as high as 400 yards of cloth single end per minute. In some cases the singer has been adapted for running two ends and the production reaches approximately 800 yards of cloth per minute per machine. Another advantage of the high speed is that the cloth gets to the extinguishing pads quicker and is less apt to have holes burnt in it.

It has been found practical to set up singers in a vertical position rather than the customary horizontal, thereby occupying less floor space and obtaining better ventilation on both sides of the cloth. In this position there is also less accumulation of lint or fly on the bars and a consequent lessening of fire hazard.

Practical Uses of the Scray

The use of scrays in front of singers, running at slightly higher speed than the singer, gives time for sewing up cloth ends without stopping the machine, eliminates uneven feed and puts the cloth in better condition for uniform singeing. Although scrays have not been so generally used here, the need for them is more evident as higher speeds are being adopted.

A circulating system for the acid sour is a marked improvement over the customary method of Twaddling the acid in the sour box. With this system there is a take-off line supplying each sour box and an overflow wier discharging a more or less steady flow back to the make-up tank. The tank is equipped for automatically making up and maintaining the acidity of the sour. There are two electrodes, one immersed in the solution which is being circulated and the other in a tube containing a standard solution of the required acidity. By means of electrical current balanced between the two electrodes the acid valve is operated to make-up and adjust the



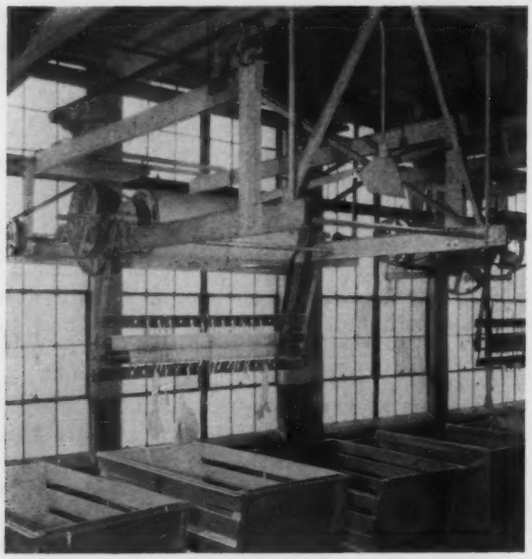
Vertical singer built for two ends and showing double scrays . . .

*Captain Learnard is plant engineer at Pacific Mills, Lyman, S. C.—**Mr. Hipp is engineer, Spartanburg office, Lockwood Greene Engineers, Inc.

acid content of the sour. A float valve on the water line maintains the liquid level in the make-up tank. The flow through the sour box back to make-up tank has the advantage of constantly correcting the acidity of the sour. The electrodes are recording, and maintain the required acidity within 1/100th of 1 per cent.

Increasing Speed in the Kiers

To speed up kier operation, particularly in plants where kier capacity is limited, high pressure pumps may be installed to feed the charges to the kier whether they be lime, caustic, peroxide, or plain wash. It is entirely possible to reduce the charging time and likewise the wash time to one-third of what had been already in practice. In plants where the piping is somewhat restricted in size, the high pressure feed system would save considerable expense in new piping and at the same time speed up operations. With the use of special pipe, such as cement lined, rubber

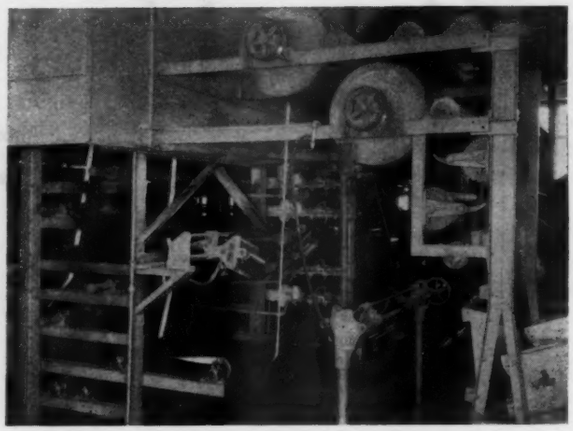


Individual motor driving swing folder in starch range. Speed controlled by "hanging" on preceding motor and gate . . . . . .

lined, asbestos, wood stave, and special metals, single charge lines may be used for the various chemicals without jeopardy.

In the starch room it is now general practice to have the finishing ranges so arranged that the machines may be run in range or as smaller groups or individuals. Each machine is equipped with individual motor except that as a rule the swing folder has been driven mechanically from the tenter. This drive is rather clumsy and unsatisfactory, particularly where the folder is located on another floor or remotely. Recently a way has been found to equip the folder with a motor without going to the expense of another compensating gate, simply by "hanging" it on the preceding motor and gate. Such arrangement gives greater flexibility and allows another machine for unwinding rolls.

Stainless steel is being used as covering surface on drying cylinders in place of copper. It gives a



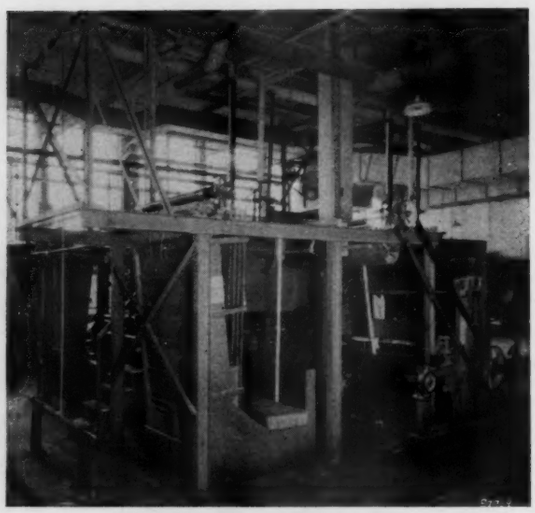
Vertical singer showing anti-friction bearings . . .

better surface and does not oxidize. Due to its high tensile strength it can be thinner than the copper covering and so heats up faster than the copper.

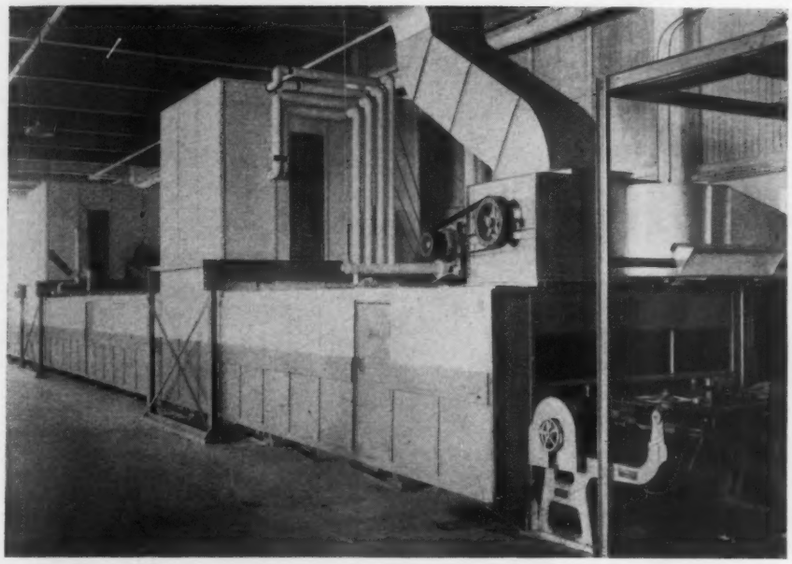
Improvements in Tenter Drying

Tenter drying is a process which has been given considerable study in the past year or two with much progress toward quality and increased production. High temperatures and high air velocities and rapid recirculation are the three most important factors. The high temperature gives to the air the ability to absorb moisure. The high air velocity gives rapid transfer of moisture from the cloth to the air. The rapid recirculation increases the cycle or number of impingements of the air with the cloth.

All of this has been improved by specially designed air blast nozzles which distribute uniformly the amount of air passing over the cloth and in such a manner and at such an angle of impingement as to remove or to transfer the maximum amount of moisture from the cloth to the air. The rapidity of recirculation is governed by the relation of the fan capacity to the tenter house volume. Small tenter houses have proven efficient and have accomplished this very thing of greater rapidity in the period of



Dye padder with scray . . .

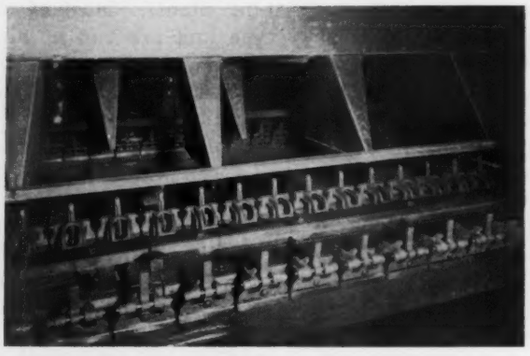


Entering end of a 90-foot tenter, showing low head tenter house with raised bottom . . . . .

air circulation, and at the same time have improved the appearance of tenter and housing. With the high temperatures that are now being used reaching approximately 350 degrees F., it is necessary to protect floors, walls and ceilings. With the modern type of fireproof and waterproof insulated housings, not only is the speed and drying capacity increased by a large percentage, in some cases almost doubled, but the room air conditions are much improved, eliminating lint and excessive temperatures.

The Range Principle in Printing

An outstanding development in cloth printing is the application of individual motor drives to the piece-goods and back-grey dryers, operating in range with the print machine. Heretofore these machines have been driven mechanically from the large cylinder of the print machine, with accompanying expan-



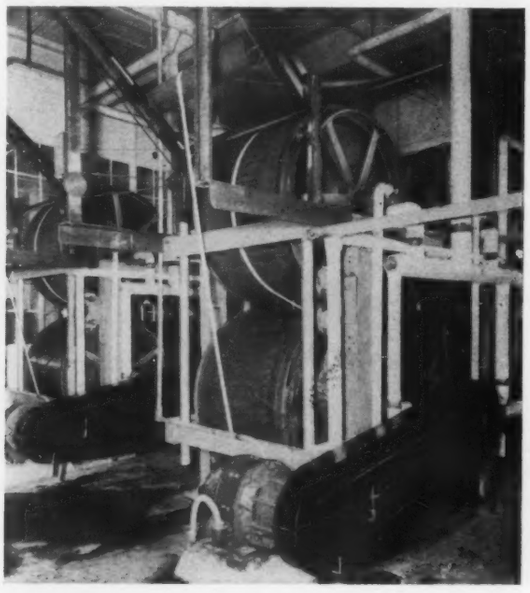
Specially designed air blast nozzles for tenter drying . . . . . .

sion pulleys for manual speed adjustment. The difficulty in motorizing the piece-goods dryer has been that it is not permissible to touch the freshly printed side of cloth until after it has passed over the dryer. Hence the rolls of the compensating gate must operate from only the back side of the cloth instead of from either side as in other ranges. This has been accomplished by means of a specially designed compensating gate. The motor on back-grey machine can of course be controlled by the usual type of compensating gate.

Complete motorization of the print range insures greater flexibility and better printing. The threading-in and run-out of cloth are simplified by being able to run the machines separately. This saves dye and eliminates useless soiling of the back-grey cloth and cylinder blanket. The pressure of the engraved rolls can be adjusted accurately to suit the pattern since they are relieved from transmitting power for mechanical drive. Correct tension in cloth is automatically maintained between units of the range at all speeds, avoiding distortion of the pattern and eliminating pile-ups and breakage of cloth.

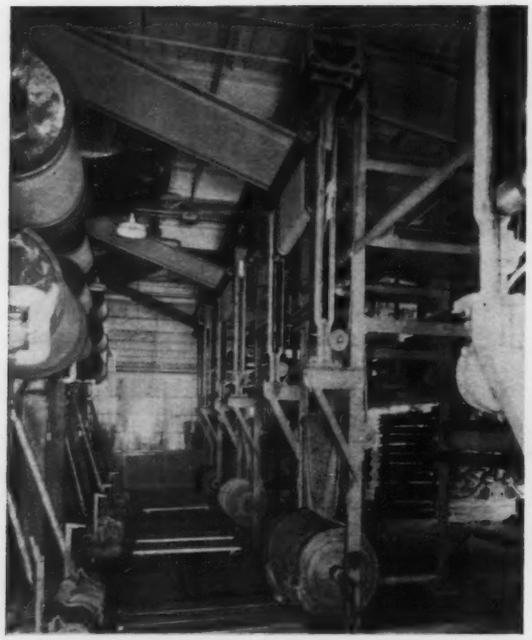
New Dyeing Improvements

The quality of dyeing has been improved by such machines as the new type jig with electric drive and control in which the speed of cloth is constant and the machine variable instead of the other way



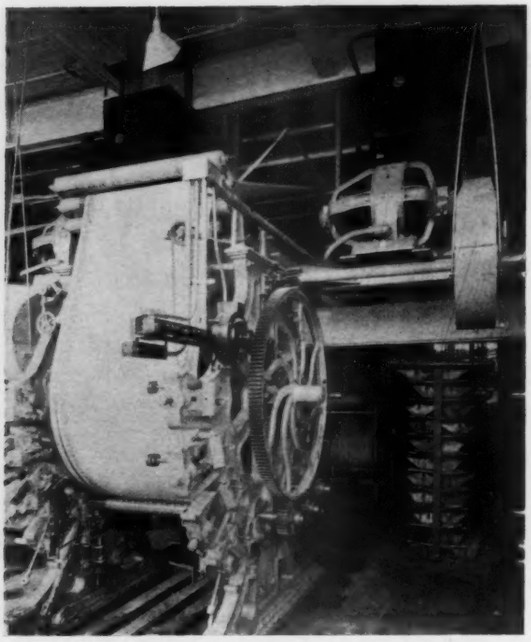
Photo, courtesy General Electric Co.

Piece-goods dry cans in printing range, showing individual motor drive controlled by special compensating gate . . . . . .



Photo, courtesy General Electric Co.

Back gray dry cans in printing range, showing individual motor drive controlled by standard compensating gate . . . . . .

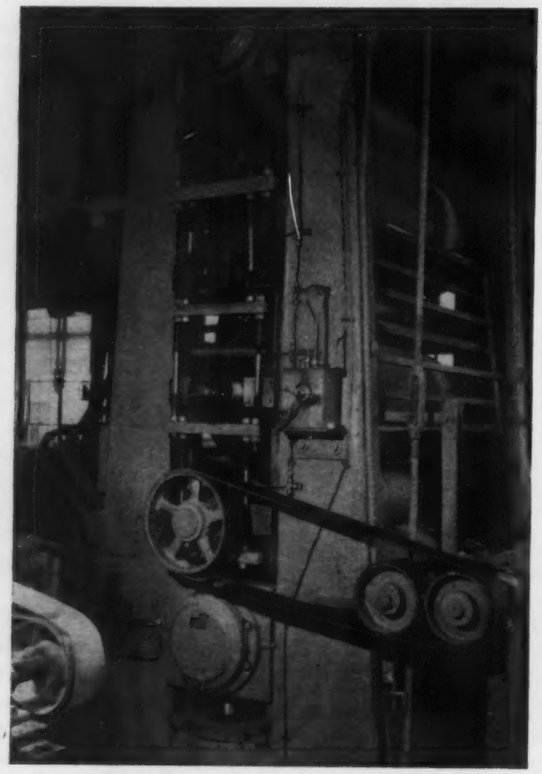


Photo, courtesy General Electric Co.

Printing machine in range, showing control panel and push button station . . . . .

around; and the continuous vat dye machine in which the cloth passes successively through compartments for dyeing, oxidizing, washing and soaping, before it is folded down ready for drying and finishing. The humble scray proves its worth again in front of the padder by feeding the cloth without stoppage for sewing up ends and at uniform tension as compared with the uneven and distorted condition when unwound from rolls or bales.

For shrunk finishes, the Sanforizing machine can be relied on to absolutely control the shrink. It has practically taken the guess out of shrinking.



Plain calender showing regulated lubrication and anti-friction bearings . . . . . .

Field for Anti-Friction Bearings

There is a wide field for the use of anti-friction bearings throughout finishing plants. Most of the machines are the heavy type and are run at high speeds. Anti-friction bearings save considerable power, extend the life of the machine, permit higher speeds, and insure better quality of cloth. In one test on a plain calender husk rolls were found to last four times as long and the speed was increased 40 per cent, as compared with plain bearings. New mechines may be purchased properly equipped with anti-friction bearings, but the revamping of old machines is also justified by the saving in power, the extended life of the equipment, and increased production.

In general, other refinements may be made throughout the plant to conserve floor space and improve production and quality, such as extraction drying, air blast drying, syphon extraction of condensate in dry cans, temperature and moisture control, counter flow of water and liquors in dyeing and washing machines, and regulated lubrication for calender journals.

Keeping a plant up-to-date consists of more than purchasing modern machines to replace the obsolete. It is the substitution of modern systems and methods, and new devices and attachments for the old.

A Keen Observer on the Sidelines Offers the Excellent Thought that--

A Return to Fundamental Truths is Needed in Modernizing Our Thinking

By E. A. Terrell*

WE HAVE been so smothered with clouds of propaganda under the euphonious title of "The New Economics", that many of us have lost sight of fundamentals. Until we come back to where we left the pathway of facts, and started wandering down the unexplored trail of theories, we shall continue to be bewildered.

There isn't any "New Economics". There is only an "economic hash", made up of untested experiments, new trials of theories that have failed in the past, restriction and taxation of production on a scale never before attempted and another effort to make all men good by law. We business men have got to eat that hash and thrive on it, whether we like it or not, until the tide turns.

"New economics" is economic hash

The first thing we must do is to clarify our thinking. We are told, and some apparently have believed, that our only hope of escape lies in collective regimentation. We are informed that all the old principles, which made us a great nation, are wrong and must be discarded for a set of new principles which even those who advocate them admit they do not understand. These new principles have been in operation for almost two years. Let us see what they have accomplished.

They have been designed to accomplish four things: First, the regulation and recovery of agriculture; second, the regulation and recovery of industry; third, to control the supply of credit and capital; and fourth, to provide social security.

Have they succeeded?

Agricultural prices have been raised by enormous processing taxes imposed upon industry and the consumer, by the destruction of vast quantities of food, and by relief measures. Still agriculture complains.

Industry has been restricted, curtailed, bull-dozed, taxed, hampered by artificial wage levels and in its dealings with labor to the point of persecution, and we are told that unemployment is just as great as ever.

Credit and capital have been lavishly furnished to those groups fortunate enough to control the necessary votes, and the cry everywhere is for more and easier credit.

Social security is in worse shape than it was when we started.

It seems evident, therefore, that we may have prolonged the depression instead of ending it. By rushing headlong into new and costly experiments, without proper consideration, we have made our original condition worse instead of better. Isn't it about time to go back to the facts and face them?

The first fact is that the purpose of business is to render a service from which a profit is made. If business does not render a service it ceases to be business and becomes a racket. If it fails to make a profit it becomes philanthrophy. Rackets serve no good purpose and philanthrophy should begin after profits are made. Neither has any place in a strictly industrial enterprise.

There is only one way to make profits. The product must meet the needs of the buyer; it must be supplied at a price he is willing to pay; and, it must be made at a cost that will leave something over for the maker. All three factors, quality, price and cost, are directly associated with productive equipment. If the equipment is the best available and the management good, which is usually the case where equipment is properly maintained, profitable business will result.

Good management often partly succeeds despite poor equipment, but that is perhaps because there is so little good management. No really progressive manufacturer is willing to limit his success or to jeopardize it by continuing to use obsolete methods.

It is admitted by everyone that our skill is unrivalled; the industry and power of our people unequalled; their ingenuity, as displayed in the continual improvement of machinery and the production of commodities, without parallel; and, apparently, without limit.

How often have you heard that said of the United States? We admit that it is true. You cannot stir up a single argument to the contrary. Yet the statement was made in 1832 by an Englishman, Charles

*Mr. Terrell is president of The Terrell Machine Co., Charlotte, N. C.

Babbage, speaking of his own countrymen. And Mr. Babbage added this thought-provoking paragraph:

"The freedom which, under our government, every man has to use his capital, his labour, and his talents, in the manner most conducive to his interests, is an inestimable advantage; canals are cut and rail roads constructed by the voluntary association of persons whose local knowledge enables them to place them in the most desirable situations; *and these great advantages cannot exist under less free governments.* These circumstances, when taken together, give such decided superiority to our people that no injurious rivalry, either in the construction of machinery or the manufacture of commodities, can reasonably be anticipated."

The artificial wage levels that have been established in the textile and allied industries; the attempt to control production of raw cotton by paying the farmers the proceeds of a staggering process tax imposed on the mills; and the limitations that have been placed upon our mills in their use of the divided labor system have combined to place them at the mercy of their foreign competitors. These same factors have subsidized foreign cotton growers at the expense of our manufacturers and, eventually of our farmers.

The distribution is out of balance

Already the textile industry is paying its price through the almost complete loss of foreign markets. Japan and other countries have taken full advantage of the situation to strengthen themselves commercially at our expense.

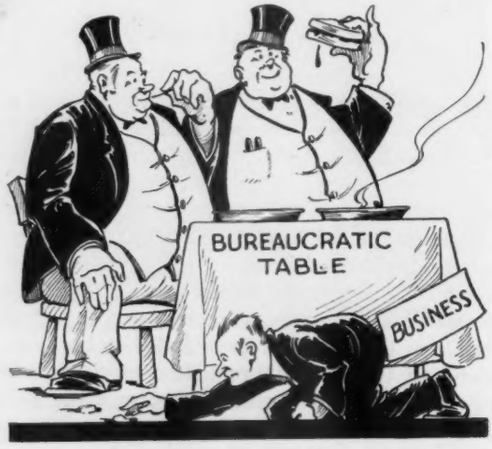
Eventually the nation, and especially the South, will realize the terrific blunder into which it has been lured by the hope of temporary domestic relief. Cotton has been one of the largest, if not the very largest, items that we export. Brazil and other countries have increased tremendously the production of raw cotton, every bale of which will displace a bale of southern staple. Part of these lost markets can never be regained. Part of them will be won back when we come to our senses and take two necessary steps.

The processing tax must be removed. It increases the cost of our goods by adding to the price of raw materials. Our competitors do not have to pay this tribute.

Wages must be reduced, with consequent lowering of our standard of living, or more efficient use of both labor and machines allowed to compensate for the difference in production costs. No one will dispute that the latter course is to be preferred.

These steps with reasonable tariffs against low wage, high production countries, will enable us to maintain our living standards and to keep our mills operating successfully.

Just now it is not popular to question either the intent of the government or the effect of its policies upon business. For the moment it is government first; business a poor second, taking the crumbs that fall from the bureaucratic table. We are urged, at



A modern Lazarus, alias The Business Man

times even commanded, to co-operate in the government's plan to socialize industry.

Herbert Casson has this to say about bureaucracy and its effect upon business:

"In all countries bureaucracy has become a national danger. It is always reaching out. It is an impersonal System that is ceaselessly trying to bring all our activities into its grasp. Its aim is uniformity. It abhors ability. It detests cleverness. It scorns profits. It is a leveller. It has no place for creative, business-building men. It is a System that is operated for the sake of System. It cannot endure variables.

"It dwindles everything it touches. It glories in details. It cuts down every large idea to fit a Form. It develops nothing. It improves nothing. It invents nothing. It is essentially destructive and anti-commercial. It cares nothing for public welfare. It cares only for its own System of uniformity.

"And this headless, will-less, heartless, System-gone-mad bureaucracy is what Socialism means. This is what the dream means when it becomes fact. This is what it means when we are fools enough to take it seriously and try to put it into operation."

A recent survey, published in the January issue of Mechanical Engineering, points out the grasp bureaucracy already has upon American industry: 163 provisions in 108 NRA codes that limit the extension and use of plant capacity and restrict industrial production. Many of these apply to the textile and allied industries.

The greater part of unemployment has been in the durable goods industries. The textile industry, under normal conditions, has always been a large user of durable goods. If freed from many of the restrictions now in effect it would again become a purchaser of new and improved equipment.

The purpose of machinery is the cheap produc-

tion of the articles to which it is applied. When new processes or machines are developed that reduce costs materially, then the old machines are no longer economical to operate. They ought either to be improved or replaced with modern machines.

Hand in hand with equipment goes the divided labor system. It is a well known fact that the fewer the processes a workman must perform, the more skilled he becomes in those processes and the greater his production.

It is equally well known that the attention and skill required to use a machine is reduced as the skill is designed into its mechanism. Every industry must, and eventually will, be free to utilize both machinery and the divided labor system to the fullest extent. No theory can upset such fundamental truths as these.

The strength of any government depends, in the end, upon the commercial strength of the nation. Experiments will give place to a return to tested methods that have been developed through long experience. Our trouble is that we are waiting for the

"Business cannot wait on government"

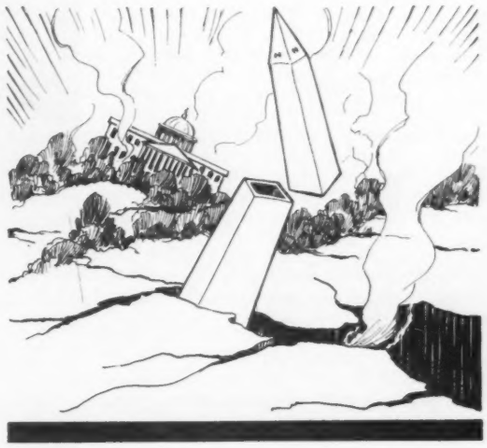
government to lead us back, or to tell us when we may resume individual control of our own affairs. And the government is not going to do either of these things. Business cannot wait on goverment. That fact has been too often demonstrated to be open to argument.

How many firms, for example, would be willing to operate with an accounting system that permits Mr. Farley to point with pride to a profit for the Post Office, while Mr. Morgenthau at the same time admits a deficit of some sixty millions for the same department?

Profit, the life blood of industry and of government, is the result of initiative, good equipment and good management. These can be had only by giving them continuous thought and, after that, continuous action. A British magazine article recently pointed out what happens when managers stop thinking and acting:

"Lancashire men were warned to put their houses in order. But they have never taken the slightest notice of anyone who told them to get a move on in anticipation of Japanese competition. The cotton industry's policy today seems to be to sit still and wait for a Japanese earthquake. If the earthquake doesn't come, then what?"

Neither can we, in the United States, wait for an earthquake in Japan or in Washington. Each of us has a triple duty, right in his own plant. To our customers we owe a satisfactory product at a reasonable price; to our employees, satisfactory working conditions and reasonable pay; to our stock-



"We cannot wait for an earthquake in Washington"

holders, reasonable profits resulting from good management and good equipment.

If the textile industry does not keep pace with other industries or with the textile industries of other nations, where government control has not yet laid its paralyzing hand upon private business, then neither mills nor employees will benefit for long, for there will be no mills to give employment. They will have been driven out of existence by their more efficient competitors. The textile industry must be given its chance to grow naturally and to utilize every principle that has proven wise in the past, every device which will enable it to produce cheaper and better goods, and every opportunity to meet the growing competition that is threatening it from every quarter of the globe.

Our choice lies between further government control of industry and individual control. What a choice that is!

Government control is inefficient, clumsy, dictatorial and destructive of initiative and human rights. Its record is consistent failure.

Private control has brought us, within the short space of 159 years, to a point where we can repeat the words of Mr. Babbage:

It is admitted by everyone that our skill is unrivalled; the industry and power of our people unequalled; their ingenuity, as displayed in the continual improvement of machinery and the production of commodities, without parallel; and, apparently, without limit.

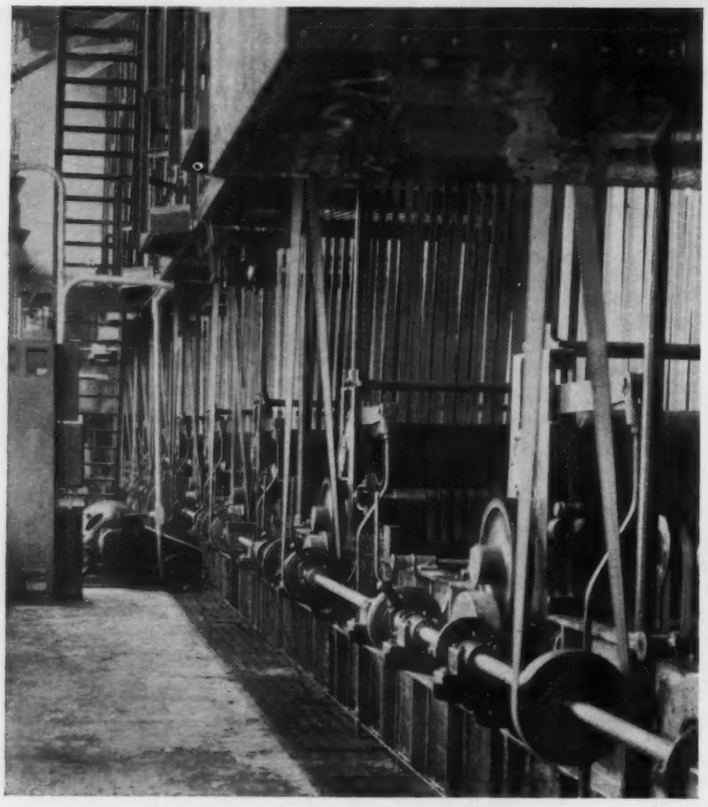
We must co-operate for recovery, but let us do it on the basis of facts undistorted by political sophistries and childish theories. Recovery will come from within when we combine intelligent management with good equipment and alert individual workmen. Our job is to co-ordinate and to utilize these factors.

Largest Continuous Indigo Dyeing Machine Ever Built Is Installed at Pepperell's Lindale Plant

THE Pepperell Manufacturing Company has installed and recently placed in operation at its plant at Lindale, Ga., a new 25-ball continuous indigo dyeing machine, which is the largest machine of its kind that has ever been built. It is a 25-ball machine, equipped with six vats and dry cans; and the production of this machine will take care of approximately 3,000 looms on denims and chambrays.

The accompanying photographs show, at the right, a view of the machine from the right-hand side, and, below, a left-hand view of the machine. These views show something of the details, but it was totally impracticable, with a standard camera, to reproduce the entire machine in a photograph in such a manner as to give a full conception of the impressive size of this equipment. To house the machine, it was necessary to construct a building 300 feet long, 50 feet wide, and three stories high. Particularly do the photographs fail in depicting the height as represented in the oxidizing reels above the machine, which extend up to a height of 29 feet above the floor.

Technically, the machine consists of creel stands for 25 ball warps; one two-compartment boiling and cooling box complete with immersion rolls and rubber-covered squeeze rolls; six single-compartment indigo vats complete with immersion rolls and one pair of rubber-covered squeeze rolls each; one two-compartment washing box with immersion rolls and one pair of squeeze rolls for each compartment; one 44-cylinder upright drying machine with cylinders 23x144 inches; and one 25-warp coiler.



The length of the machine, from the entering end of the boiling box to the delivery end of the dryer is 162 feet. The height from the bottom of the dye vats to the top of the oxidizing reels is 36 feet; the height of the top of the oxidizing reels above the floor is 29 feet.

There are two walkways built of subway grating around the oxidizing equipment to give easy access to this part of the machine.

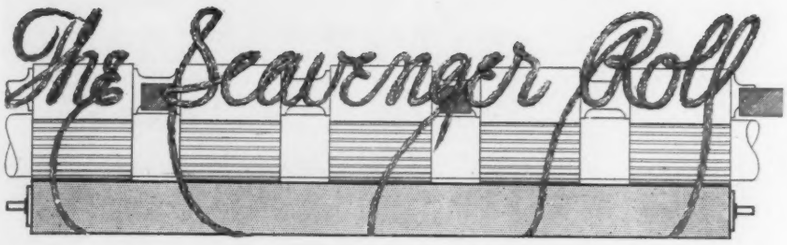
The entire machine, including the coilers on the second floor of the building, is driven by one 75-hp. Allis Chalmers slip ring motor through a tex-rope drive. Dry cans and coilers are driven from the dye machine through a Reeves variable speed drive.

A copper hood with exhaust fans is provided over the boiling and washer box, and wooden hood and housing over the dry cans to eliminate fog and excess moisture from the atmosphere.

All squeeze rolls are fitted with roller bearings. All oxidizing reels and draw rolls are fitted with ball bearings. These antifriction bearings, together with a special arrangement of draw rolls and compensating rolls installed in the oxidizing racks between each compartment, reduce roll drag and tension on the warps to a minimum leaving the yarn with its natural elasticity.

Ball warps come from the warpers on the third floor of the building to the first floor, run through the machine and dry cans, then up through a slot in the floor to the coilers, then direct to long chain beamers on the second floor, and thence to the slashers.

The equipment was built by Cocker Machine & Foundry Co., Gastonia, N. C., and Robert & Co., Inc., Atlanta, Ga., were the architects and engineers on the design and construction of the building.



MODERNIZATION Requires Intelligent Treasurer-Superintendent Relationship

"DON'T cross bridges until you get to them" —from childhood we've had that drilled into us. It expresses what is probably an animal instinct, although not common even to all animals, to take the easiest way, stay in the rut, not to look ahead.

A man whose acumen and judgment we have learned to respect once remarked, "You've always heard you shouldn't cross bridges before you reach them, but I want to tell you that every cent I have, every building I've completed as per contract, and everything I've accomplished has been made possible by crossing unreached bridges. It is only by weighing the certainties and uncertainties ahead, by allowing for some and insuring against others that you can be sure of progress."

This remark came to mind a few months ago when we were visiting a very successful mill. We walked through a spinning room in which the work was running beautifully and at standard speeds. We knew the policy of the management had been careful maintenance of the equipment; for instance, when roller necks became worn they weren't re-necked but new rollers were bought. The only point of the frames at which we could detect wear was the spindle whirls; after thirty to thirty-five years of service the bands had cut into them. The superintendent asked our opinion of these frames and our reply was to the effect that we believed they were in better condition than seventy per cent of the spindles in the South. "Well," he said, "we're replacing these 35,000 spindles with modern frames. While these frames are running all right, producing good yarn at satisfactory speed, yet there are some advantages in up-to-date frames and we are going to buy them before we are forced to." We silently hoped some spinning overseers we had seen struggling along with obsolete equipment would be fortunate enough to fall heir to the frames this mill was replacing.

Why, we've pondered, is machinery allowed to get into bad condition, and why is so much unprofitable, obsolete equipment continued in operation? Lack of finances? All right, but which came first, the chicken or the egg? the run-down machinery or the shortage of cash?

Isn't a large part of the answer to our question to be found in the treasurer-superintendent relationship? This isn't a sermon, believe it or not, but simply a few thoughts based on a few years' observations. It seems to us that in nine cases out of ten when the superintendent approaches the treasurer with a proposition requiring expenditures the treasurer is immediately on the defensive.

Insofar as guarding the company funds is concerned that seems a natural reaction, but the unnatural part of it is that the on-guard attitude is taken toward a man who is supposed to be working to the same end; namely, the profit and advancement of the company.

Sadly we must admit the treasurer's defensive attitude is often justified because the superintendent hasn't weighed carefully the proposal he is recommending, hasn't established as certainly as he can how and to what extent the repairs or the new equipment, as the case may be, will benefit the mill.

So what?

First, the superintendent should periodically (preferably the first of each year) analyze his mill from the standpoint of maintenance and obsolescence, with his own resources and/or the assistance of competent engineers. The results of this analysis should be put down in figures that can be supported by actual operating performances and conditions. When recommendations supported by such analysis, figures and sound arguments are presented to the management, any or all of the following things result:

1. Confidence in the ability and knowledge of the superintendent is increased;
2. The management knows the true condition of the plant;
3. The program is more likely to be approved than if approximations are made, guesses resorted to, and the plans made haphazardly.

We are naive enough to believe the man or men in charge of company funds can't gainsay maintenance and replacement programs thus laid out, provided the money for following them is available. And even if the money can't be had, from the superintendent's standpoint alone the annual or semi-annual analysis is valuable.

"Figgers don't lie but liars do figger" is a perversion of the old adage. The superintendent who is running his machinery year after year with minimum repairs and replacements had better do some "figgering" that he can show the treasurer so that the true condition of the plant will be known and plans made for the future. Otherwise he may soon be "figgering" on where to get another job.

Second, the management must realize that the goose is being killed if a maintenance and modernization program is not continued. If a superintendent submits a well-considered program, don't conclude immediately that he has been listening to a high-pressure salesman or that he is trying to make his job easier. Give him credit for having the best interests of the mill at heart and believe that until it is proved otherwise.

The "stitch in time" proverb is frayed and worn, which is a compliment to its enduring truth.

The weave room of the Samoset Cotton Mills, Talladega, Ala., before painting

Plant Protection by Painting

Paint is an Investment; Not an Expense

By S. W. Quisenberry*

NO MILL can afford long to overlook the possibilities of economy, better appearance, improved working conditions and morale which exist in its painting program. Here is an impressive statement of what may be accomplished—and a description of how many of the more progressive and successful mills are going about the achievement of ideal conditions . . . . .

MANY textile executives have, in the past, felt that painting on plants and villages, both inside and outside, was an expense; necessary, true, but an expense nevertheless which was many times delayed until the necessity for expensive repairs brought the painting program forcibly to their attention.

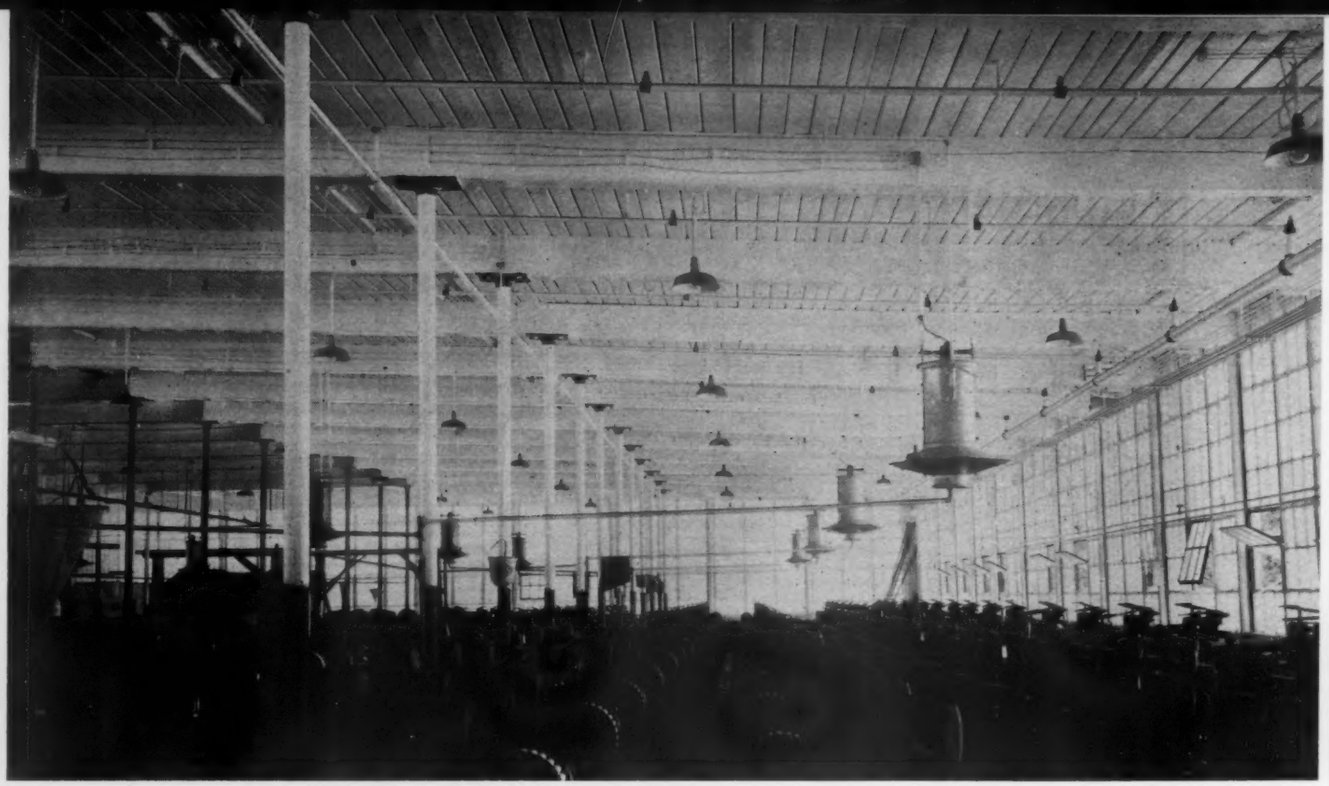
The investment made by the textile industry in operating and maintaining plants and villages aggregates many millions of dollars. The only way in which this tremendous investment can be protected from the ravages of rust and decay, is with paint. Too much emphasis cannot be placed on the importance of paint in the textile field, as, for every dollar's worth of paint products intelligently applied, many dollars will be saved in repairs. In other words, paint is an investment, not an expense, although in many cases, in order to keep down operating expenses, it has been decided to postpone the painting program until some future time.

Apparently, these jobs can be postponed without much apparent loss to the plant and the plant operations. Nothing could be more untrue, for the actual rust and decay proceeds just as rapidly during slack periods as in periods of production and no plant manager would think of cancelling his fire insurance to cut costs in spite of the fact that the fire hazard is only a possibility while the hazard of rust and decay is an absolute certainty. Just how great a premium management pays for delaying necessary painting schedules can be illustrated by a few pertinent examples.

At one mill with which I am familiar, the woven wire fence around the plant needed painting, but due to conditions, it was decided to delay the painting until the following year. The result was that rust had time to do its work and by the following year it was found necessary to sand blast the entire fence to remove the accumulation of rust which also made essential a priming coat as well as the top coat, thereby increasing the cost of the job with the preparation over 300 per cent.

At another mill the metal sash was badly in need of paint, but here too a delay was permitted "until

*Mr. Quisenberry is maintenance engineer with the Finishes Division, E. I. du Pont de Nemours & Co., Atlanta, Ga.



The same weave room at Samoset, after painting. Note difference in appearance, visibility, etc.

business improved" with the result that expensive replacements had to be made with an excessive cleaning and preparatory expense to put the sash in proper shape for repainting, thereby not only greatly increasing the cost of the operation but also permitting expensive repairs which could have been obviated by going through with a program at the proper time.

Delay in necessary painting programs results in an extremely high premium as it practically always means increased costs covering excessive preparation of the surface and in many cases, expensive repair work with additional coats of paint, and, in many cases, interruptions in plant operations. We believe that every textile mill could very profitably budget an annual sum for interior and exterior paint maintenance and find that they had made a lucrative investment from the standpoint not only of decreased painting costs but also of the considerable saving effected in repair expense.

To meet your particular situation, budget your annual painting program so that instead of being confronted at any particular time with a large and expensive painting program, you are continually painting your various operations which results in the elimination of a bulge in expense at one particular period and also in your properties being well kept at a minimum of repair cost. This is made possible by a systematic or periodic inspection not only of interior and exterior mill property but also of your villages. In addition to these periodic inspections by your own employees, paint manufacturers usually have thoroughly experienced paint engineers who will be glad to inspect your properties regularly and make reports which will usually confirm the advice of your own employees. In this way, no surface is permitted to go beyond the time when repainting is really necessary so that your repairs and replacements on maintenance work are reduced to a minimum. It is, of course, extremely difficult to set a definite inspection period on all surfaces as some areas in a textile mill are subjected to extremely severe conditions where paint film will show considerably more rapid failure than other areas. This of course may be the result of different exposures, different types of lumber or construction materials or in areas such as dye-houses, etc., where paint films are subjected to very severe exposures.

To start this program, we would suggest the procedure of having a manufacturer's paint engineer survey your entire operation including the villages. This covers every conceivable surface on which paint or paint materials should be used. A chart will then be drawn up enumerating the various surfaces on which protection is necessary and the proper product as well as the color desired selected for each surface. This insures your receiving not only the color selected but also the proper material to do the required job. We can all recall that in years gone by, paint was paint and many times an ordinary oil house paint was applied to pipe lines for instance, where this type of material might be rust-promoting, when actually a rust preventing or rust-inhibitive paint should have been used. By making this detailed study of surfaces you are assured of getting the proper material for the required work resulting in considerable economy in purchases as well as, again, a very definite economy in replacements. The accompanying reproduction of a chart as described will give some idea of the plan.

In reference to village painting, let us reduce the cost of exterior village painting to a dollar basis and in terms of protection or insurance against depreciation and repairs. The average cost of painting a village house with two coats is approximately $30.00 to $35.00. The average paint film life is from 3½ to 4 years, which means that adequate protection of this investment costs about $8.00 per year. The influence of well-painted village houses on your employees is difficult to estimate in the promotion of cleanliness and more satisfactory living conditions

PAINTING STANDARDS FOR WEST POINT MANUFACTURING CO.

LANETT MILL
LANETT BLEACHERY & DYE WORKS
SHAWMUT MILL
LANGDALE MILL
FAIRFAX MILL
RIVERDALE MILL
DIXIE MILL
ANCHOR DUCK MILL
WEHADKEE YARN MILL
SAMOSET COTTON MILL

(Prepared by E. I. du Pont de Nemours & Co., Volunteer Life Building, Atlanta, Ga.)

MILL INTERIOR

CODE	SURFACE		PRODUCT
1	WALLS & CEILINGS	PRIME COAT	Dulux Mill White Undercoater
2	WALLS & CEILINGS	FINISH COAT	Dulux Mill White Gloss
3	DADO	FINISH COAT	Floor and Deck, Dark Stone
4	DADO	FINISH COAT	Floor and Deck, Light Stone
5	DADO	FINISH COAT	Floor and Deck, Dust Color
6	SPRINKLER LINES–Fittings Only		Dulux Machinery Finish Fire Equipment Red
7	CONDUIT LINES–Fittings Only		Dulux Industrial Finish R. F. 53032 Blue
8	HEATING LINES	FINISH COAT	Heat Resisting Aluminum
9	AIR LINES–Fittings Only		Dulux Machinery Finish Black
10	HUMIDIFIER HEADS		Dulux Machinery Finish Light Gray
11	HUMIDIFIER LINES–Fittings Only		Dulux Machinery Finish Light Grey
12	DRINKING WATER LINES–Fittings Only		Dulux Machinery Finish Yellow
13	SERVICE WATER LINES–Fittings Only		Dulux Machinery Finish Bright Green
14	ELEVATORS		Floor and Deck Dark Stone
15	DOORS		Floor and Deck Dark Stone
16	MACHINERY		Dulux Machinery Finish Dark Green
17	MACHINERY		Dulux Machinery Finish Black
18	MACHINERY		Dulux Machinery Finish Fire Equipment Red
19	MACHINERY		Dulux Machinery Finish
20	MACHINERY–Card Room		Extra Brilliant Aluminum
21	MACHINERY–Spinning Room		Dulux Machinery Finish Light Grey
22	MOTORS		Dulux Machinery Finish Light Steel

MILL EXTERIOR

A	WOOD SASH	PRIME COAT FINISH COAT	Duwhite
B	WOOD TRIM	PRIME COAT FINISH COAT	Duwhite
C	DOORS		Floor and Deck Dark Stone
D	STEEL SASH	PRIME COAT	Dulux Kromate Primer
E	STEEL SASH	FINISH COAT	Extra Brilliant Aluminum
F	WATER TOWERS–Exterior	PRIME COAT	Dulux Kromate Primer
G	WATER TOWERS–Exterior	FINISH COAT	Extra Brilliant Aluminum
H	WATER TOWERS–Interior	PRIME COAT	Dulux Kromate Primer
I	WATER TOWERS–Interior	FINISH COAT	Flexo Film Black
J	FIRE PLUGS	TOP BOTTOM	Extra Brilliant Aluminum Dulux Fire Equipment Red

MILL EXTERIOR–Continued

CODE	SURFACE		PRODUCT
K	FIRE HOUSES–Roof & Trim		Dulux Metal Protective Bronze Green
L	FIRE HOUSES–Body		Dulux Fire Equipment Red
M	CYCLONE FENCE	PRIME COAT	Dulux Kromate Primer
N	CYCLONE FENCE	FINISH COAT	Dulux Metal Protective Bronze Green
O	DOWN SPOUTS		Extra Brilliant Aluminum

FILTER PLANT

101	CONCRETE WALLS–Exterior Body		Cement and Stucco Coating Cement Color
102	CONCRETE WALLS–Exterior Trim		Cement and Stucco Coating White
103	WALLS & CEILINGS–Interior	PRIME COAT	Dulux Mill White Undercoater
104	WALLS & CEILINGS–Interior	FINISH COAT	Dulux Mill White Gloss
105	BEAMS & PIPE LINES		Extra Brilliant Aluminum
106	CHEMICAL DOSING EQPT.	PRIME COAT	Dulux Kromate Primer
107	CHEMICAL DOSING EQPT.	FINISH COAT	Flexo Flim Black

MILL VILLAGE INTERIOR

301	CEILINGS	Flat Wall Ivory
302	WALLS	Flat Wall Cream
303	WALLS	Flat Wall Light Buff
304	WALLS	Flat Wall Light Tan
305	WALLS	Flat Wall Grey
306	WALLS	Flat Wall Patina Green
307	WALLS	Interior Gloss Ivory
308	WALLS	Interior Gloss Buff
309	WALLS	Interior Gloss Green
310	WALLS	Interior Gloss Grey
311	WOODWORK & FLOORS	Tufcote Mahogany
312	WOODWORK & FLOORS	Tufcote Walnut

MILL VILLAGE EXTERIOR

201	BODY & TRIM	PRIME COAT FINISH COAT	Duwhite
202	PORCHES & STEPS		Floor and Deck Dark Stone

This illustration shows a typical chart supplied by a paint manufacturer to a group of southern mills indicating the surfaces on which paint or paint materials should be used, and the proper product for each purpose. (In the original chart, a color chip showing the color appears beside the name of the product; it not being practicable to reproduce these here) . . . . . .

but we all realize the advantages of promoting and improving the morale of our employees at all times.

You will find that following a systematic program for the interior painting of your mills is profitable. By actual test, a properly painted room develops very considerably more light which results in improved efficiency of the employees and a very probable reduction of seconds or throw-outs in production work. We are showing herewith a before and after picture of a weave room which will very clearly show the improved lighting and appearance of a correctly finished interior.

More and more textile operators are finding it necessary to plan a definite systematic painting program, both inside and outside, as they find this plan a wise and profitable investment. However, in order to secure the most value for your paint dollar, we believe it advisable to consult an experienced paint engineer to assist in the outlining of your program. Many advances have been made in the paint industry in the last few years in the way of new and improved products and you can secure not only advice regarding the proper materials to use for your paint work but information as to the best methods of application and any special surface treatment that might be needed.

IF YOU KNOW A HARDER TEST FOR AIR HOSE please tell us

GOODYEAR EMERALD CORD HOSE
SPECIFIED BY G.T.M.
TUBE ESPECIALLY COMPOUNDED TO RESIST LUBRICATING OILS
MULTIPLE DOUBLE BRAIDS OF CORD EXTRA RESISTANCE TO BURST AND VIBRATION

Boiling-hot oil—under pressure

Stood up under trip-hammer test TWICE as long

GOODYEAR engineers were testing a new type of air hose—putting it through a "third degree" such as no hose had ever stood before.

For air hose gets cruel and unusual punishment, even in everyday service. Heavy-laden trucks may run over it, cracking the carcass. Hot oil works through the line, disintegrating the tube. Dragging over rocks cuts the cover.

For years they had experimented with new rubber compounds for tubes; with extra-tough cover stocks. In place of the customary fabric body, they wove a new type carcass of multiple, double-braids of high tensile cord.

Then, they built up a hose. Theoretically it should last months longer under hardest usage. But they wanted to be sure.

Boiled in oil—then beaten

So they gave it "the works." First they forced boiling-hot oil through it under pressure. It stood that longer than any other hose!

In this test, the hose was attached to an air hammer to duplicate actual service conditions. The tube of the Goodyear hose swelled 50% less than the other types of hose tested and, furthermore, there was no flaking of the tube to clog the hammer.

The trip-hammer test

Fine, so far. But what would happen if a heavy rock or truck crashed down on it?

They put it under a trip-hammer. *Crash!* The hammer smashed it flat—for a second. Up came the hammer—up came the hose, as good as new. Again and again and again. Other hose cracked and split—but that new multiple-braided carcass came back under TWICE *as many impacts!*

That is how the Goodyear Emerald Cord Air Hose was developed. And it has proved itself to be as good as these "torture" tests indicated, by lasting *three—four—five* times longer on the same job than other makes of hose—cutting hose costs as much as 80% in some industries!

Job-fitted by G. T. M.

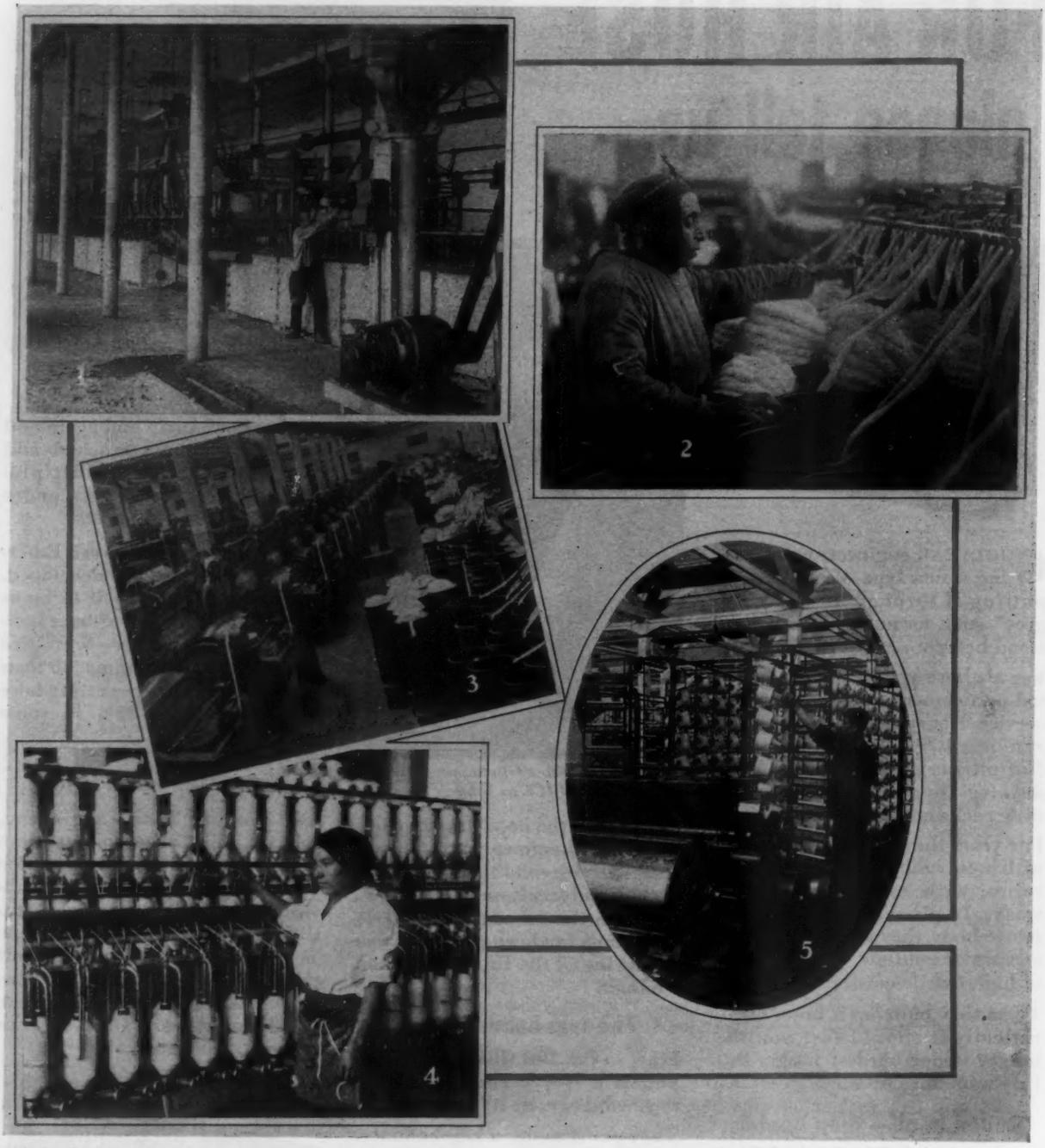
All Goodyear Hose—air, steam, acid, oil, paint, water and gasoline—has been specially developed for its particular service, and is individually specified to your operation by the G. T. M.—Goodyear Technical Man. Why not consult this practical expert on your hose problems? To reach him, write Goodyear, Akron, Ohio, or Los Angeles, California.

BELTS • MOLDED GOODS
HOSE • PACKING
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

GOODYEAR

A Pictorial Visit through Some



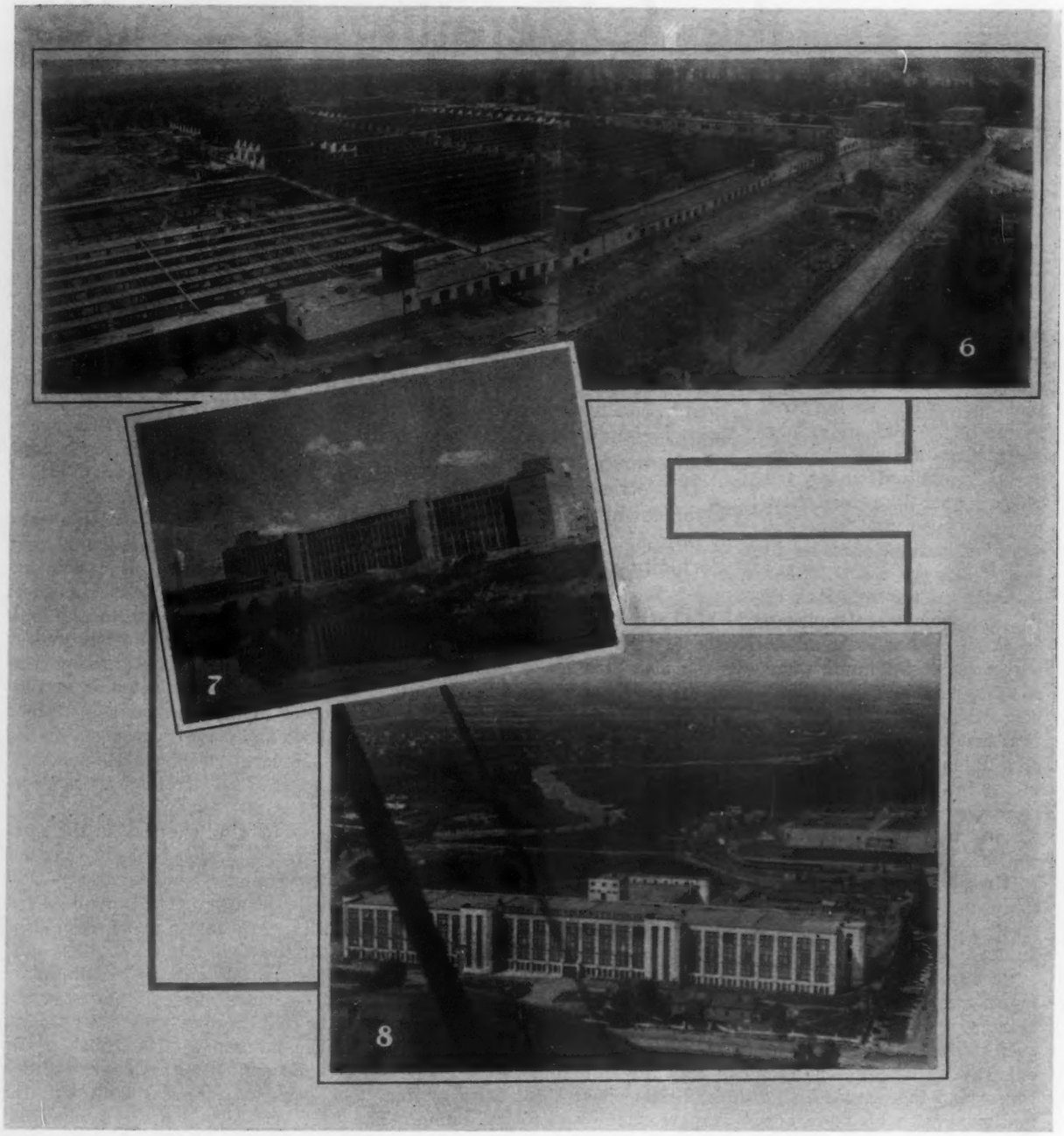
Photos by Sovphoto

THE accompanying photographs, showing interior and exterior views in some Russian cotton mills, are presented as being of interest to textile manufacturers in America. They give a good idea of the extent to which the Soviet is proceeding with textile manufacturing as a part of the country's industrial program. The exteriors, on the right-hand page, show the type of construction used for the buildings, and indicate somewhat the size of some of the mill buildings. The interiors show views which might well be photographs of American plants. A brief description of the different photographs follows:

(1) Interior of the first USSR factory, at Moscow, for producing cotton from fibrous plants. The plant was opened in 1931. An interesting type of variable speed motor is seen in the foreground.

(2) An operative tending drawing frames in a textile mill at Azerbaidjan, one of the Soviet repub-

of the Cotton Mills in Russia



lics bordering the Caspian Sea. Cotton for this and other textile factories in this region is grown on the nearby Mugan Steppe.

(3) A well laid-out card room in a mill at Barnaul, in Southwestern Siberia.

(4) A woman of Turkmenistan, one of the Asiatic republics of the Soviet, shown tending a fly frame in one of the new mills of Ashkabad. This woman, like all women of this section, was formerly veiled and never permitted to appear in public.

(5) A German-made Schlaforst machine (similar to American-made high speed warpers with magazine cone creel) in one of the textile factories at Shuya in Ivanovo Province, Russia.

(6) One of the new spinning mills of Central Asia.

(7) A recently opened textile mill of 155,000 spindles, located at Ivanteevka, in the Moscow district.

(8) A view of the new spinning mill "F. E. Dzerzhinsky", at Ivanovo, one of the factories completed under the Soviet first five-year-plan for industry.

"The Moving Finger" and the Operating Executive

NO discussion of Modernization for the textile industry would be complete without consideration of that most important link in the chain of human relationships—the overseer and superintendent . . .

The conditions imposed by the codes have intensified the importance of these operating executives. Theirs is the chief place in the plan of producing quality goods at a cost permitting a profit, and maintaining and encouraging efficiency, happiness and contentment among the operatives . . .

This article, then, salutes you, Mr. Overseer and Mr. Superintendent, and it presents your problem and your opportunity . . .

THE preponderance of business sentiment may be unfavorable to the NRA. Labor, organized and unorganized, may now be disillusioned about the promise at the end of its rainbow. The codes may go, Section 7A may pass to the limbo of forgotten things. But the hand that wrote the NRA is the one with Omar's moving finger that "writes and having writ moves on". And all of our resentment against the excesses committed under the NRA cannot lure back that moving finger to "cancel a word" of such advances as, in the public's eye, the NRA has initiated in the relations of the employer to the employees in his business.

Chief among these advances are (1) the idea of a reasonable minimum wage, (2) the idea of a reasonable maximum hour limitation, (3) the idea of a correctly adjusted work assignment, and (4) the idea that employees have the right to join or not to join any union without let or hindrance from the employer in order to bargain collectively or individually as each may wish.

And thereby the moving finger is writing on the wall of every cotton mill in a script plain to all who will read, the specifications of the operating executive who will survive the new conditions and grow in stature and return a profit under them to the stockholders.

The minimum wage for the reduced maximum hours means the plant and its equipment and machinery, whether old or new, must be maintained in such perfect condition by cleaners, oilers, fixers and operatives that all employees can earn the minimum wages and the proportionate differentials above the minimum with no more effort than reasonably can be expected of an average human being.

Essentially then under the new conditions an operating executive must be a trainer of people or a supervisor of their training. He must be of the type of mind, or train himself to be of the type of mind, that looks objectively at all the activities in his charge, analyzes the best standards of method, quality and quantity for each activity, and then sees that everybody is trained up to these standards on the job that each is paid these minimum wages to run. He must be of that organization-builder type of mind that keeps a crew studying and developing themselves for the key positions in his charge against the certain time when the present incumbents thereof will pass up or pass on.

Without any of us realizing fully what has happened, the minimum wage has relegated to the economic scrap-heap probably a greater proportion of industrial employees than it has relegated obsolete machinery, and in the filling of these vacancies has created such a demand for people who can earn the minimum wage that the executive who expects talent that can meet modern-day requirements to walk up to the mill gate looking for work will shortly himself go the way of all things obsolete. From now on textile mill talent must be carefully selected as to aptitudes for a given job or jobs and intensively trained to the standard methods and performance established for that job or jobs. Modernized plants demand modernized employees selected and trained by modernized methods.

Watch three women tending winders on the same count and grade of yarn. The job literally runs one woman ragged. She sees only what is immediately in front of her and hence never gets control of her whole job. The mill always has to make a donation to her wages to meet the code minimum. The next buxom lass is fighting the job with all her abundant and largely wasted muscular energy. She says she is a wreck at the end of the day, and looks it; but manages to make the minimum. The third, a slip of a girl, saunters and smiles with ease, without a false motion, and averages four dollars above the minimum. The first and second are stretched out beyond (their) human endurance. The first is doubtless mentally inadequate to that particular job. The second can be studied and trained into the efficient method that the third says she finally discovered by trial and error. The executive of the new day will search and test for basic job aptitudes and then by studied intention will train all his employees into the standard methods that the efficient employees discover for themselves by fortunate chance.

More and more the operating executive, although he may never have seen a college hall from the in-

WE'VE 2 GOOD REASONS FOR SAYING:

"Put your mill on cork"

1. **Your yarn will be of equal or better quality.**
2. **Your roll covering costs will be reduced 50% to 75%.**

MILL men everywhere will back up our statement that you get a two-way gain with Armstrong's Seamless Cork Cots.

The quality of yarn produced on cork is more uniform. That's because cork cots are not unfabricated products of nature; they're manufactured under strictest control. There's only one quality and every Armstrong's Seamless Cork Cot is exactly like every other one. Mills making yarn that must meet the highest standards are running "on cork." *They* realize the value of using cots that are uniform.

The saving in roll cost results from the long life of cork cots. They give you four times the service that ordinary coverings give. Fewer roll changes are required. And now that glue is applied in the cots at the factory, the original cost of covering with cork is reduced 10%.

For full information, write Armstrong Cork Products Company, Textile Division, 923 Arch Street, Lancaster, Pennsylvania.

Armstrong's Seamless Cork Cots

FOR SPINNING AND CARD ROOM ROLLS

side, will assume the ethical professional man's attitude toward his work and the people with whom he associates. Careful investigation, impersonal diagnosis of troubles, searching all available knowledge for a remedy, analytical testing of plans, will be the order of the day. Prejudices about persons and ideas, guess-work, must go. Frank facing of facts, accurate knowledge and figures will take their place. Does that job have too heavy or too light an assignment? The answer will be positively "No", or "Yes", and how much, according to what is shown by the loom-stops or ends-down per hour or B-hours of whatever measure is used for the accurate designation of effort.

Will the new operating executive be sympathetic? He will, and intelligently so; for his reactions will be based on accurate knowledge of the human beings in his charge, their jobs and what each can do, and not upon his personal like or dislike of each or upon his guess or caprice of the moment.

The collective bargaining drive is on. Wild rumors, intensity of emotions and the gullibility of a generous essentially rural people have raised the hands of brothers and sisters, parents and children, employer and employees, against each other. Only the calm dispassionate intelligence of operating executives who rise above the prevailing bickerings and bitterness can pilot the mills and the mill people through the labor storms of the present and those that lie ahead.

In the year and a half since the labor disturbances started in the cotton mills seemingly in every happy averting of threatened trouble or healing of the wounds after overt trouble, could be found somewhere the fine Italian hand of a professionally-minded overseer, superintendent or other operating executive who rose superior to the minds that looked to him for leadership. And conversely many a case of a labor molehill grown to a mountain of controversy revealed somewhere the executive ineptitude of someone in a key position who did not measure up.

"The moving finger writes and having writ moves on."

Hosiery Inventories Remain at Low Point

Stocks of hosiery on hand at the end of November show insignificant increases as compared with stocks at the end of October, according to the current issue of the statistical bulletin of the Hosiery Code Authority.

Full-fashioned hosiery continues to show material decreases in inventories as it has for the four months previous. The net increase registered for all types is traceable to an expectable increase for this time of the year in certain types of seamless hosiery, notably anklets. Manufacturers are busy during the Fall months producing against orders deliveries on which do not take place until after the first of the year.

The total stocks on hand at the end of November were 15,940,269 dozen pairs, as compared with 15,808,097 dozen pairs at the end of October, and with 15,473,394 dozen pairs at the end of November, 1933, thus showing an increase in stocks on hand as compared with the previous year.

Stocks on hand for full-fashioned hosiery declined from 4,222,891 dozen pairs at the end of October, to 3,868,466 dozen pairs at the end of November. Stocks on hand for women's seamless hosiery declined from 1,711,086 dozen pairs to 1,691,774 dozen pairs at the end of November, the decline being registered in all types, except women's rayon seamless hosiery. Men's seamless hosiery declined from 5,033,229 dozen pairs to 4,823,996 dozen pairs, the decline being effective in all types, excepting cotton.

Production during the month of November was practically unchanged from that of the previous month, being 9,239,590 dozen pairs, as compared with 9,322,243 dozen pairs for October. Full fashioned production was 2,944,084 dozen pairs, as compared with 3,009,702 dozen pairs in October, and seamless production was 6,295,506 dozen pairs as compared with 6,312,541 dozen pairs in October.

Shipments of hosiery were 9,107,418 dozen pairs, as compared with 9,611,408 dozen pairs in October. A similar drop was recorded in shipment during November of 1933, but the 1934 decrease was smaller than that recorded in the previous year.

In order to obtain a clearer picture of the seasonal trend, the current bulletin compares shipments for the five-month period from July to November 1934 with the corresponding period of 1933. This comparison shows that total shipments of all types combined for the period in 1934 were 93 per cent of those during the period of 1933. Shipments of men's seamless cotton hosiery, anklets—other than infants', boys' socks, cotton bundle goods, children's 5/8s flat and 7/8s, and women's full-fashioned hosiery, all exceeded the 1933 shipments for the period of comparison.

The rate of turn-over for all types combined for the twelve months ending November 30th remains at approximately once every sixty days, as it has been for each of the twelve-month periods ending with the four months prior to November.

A rapid rate of turn-over of more than seven times per year was shown in boys' golf hose, children's 5/8s flat and 7/8s, men's seamless rayon and boys' socks. A slight turn-over of less than four times a year was recorded in women's seamless wool hose, men's golf hose, men's ribbed goods, men's seamless wool, men's seamless silk and men's full-fashioned hose.

* * *

Armstrong Forms Distribution Co.

Effective January 1, 1935, all Armstrong products formerly sold by the Armstrong Cork Company and the Armstrong Cork & Insulation Company are being distributed by a subsidiary company to be known as "Armstrong Cork Products Company," according to an announcement issued at the executive offices of the Company in Lancaster, Penna.

It was emphasized that the change in the name of the sales organization does not in any way alter Armstrong's distribution policies or personnel. All corporate functions other than marketing will be continued under the name, Armstrong Cork Company, the announcement stated.

* * *

Chamberlin Joins Warwick Chemical Co.

Dr. Dale S. Chamberlain, formerly technical director of the R. K. Laros Silk Company, Bethlehem, Pa., has joined the sales staff of the Warwick Chemical Company, West Warwick, R. I. He will be in charge of the development and sale of oil products for the preparation of silk and rayon in the throwing, sizing, knitting and weaving industry.

CROSS COTTON MILLS COMPANY
Double Carded Knitting Yarns

KENDALL MILLS
DIVISION OF THE KENDALL COMPANY
GENERAL OFFICE
WALPOLE, MASS.

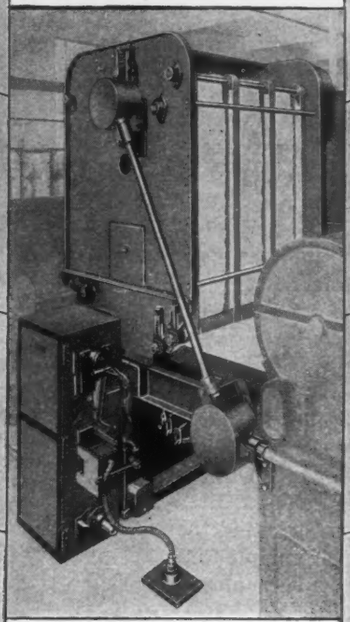
The Springs Cotton Mills
EXECUTIVE OFFICE

THE DUNSON MILLS
LA GRANGE, GA.

COSMOS IMPERIAL MILLS LIMITED
MANUFACTURERS OF
COTTON DUCK
AND
COTTON DRYER FELTS
HAMILTON, ONTARIO

Goodyear Fabric Corporation
COMBED AND CARDED COTTON FABRICS
NEW BEDFORD, MASS.

PEPPERELL
TRADE MARK
FABRICS



Among the Users

of the Saco-Lowell Cleaning and Blending Reserve are many progressive mills. To win such approval within the six months since its introduction, the Reserve had to embody unusual advantages.

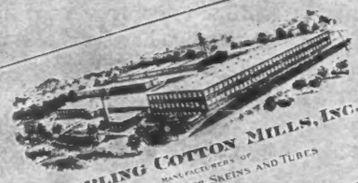
BOOTT MILLS
LOWELL MASS. U.S.A.
TOWELS
TOWELING
CURTAINS
SCRIM

WISCASSETT MILLS COMPANY
COMBED AND CARDED
COTTON YARNS
FULL FASHIONED HOSIERY
ALBEMARLE, N.C.

Cannon Mills Company
Largest Manufacturers of Towels in the World
TRADE MARK
CANNON
MANUFACTURERS, NORTH CAROLINA, U.S.A.

CHICOPEE MANUFACTURING CORPORATION
OF GEORGIA
Chicopee, Georgia

THE WHITE MILLS OF NEW HAMPSHIRE
COTTON MANUFACTURERS
WINCHENDON SPRINGS, MASS.



STERLING COTTON MILLS, INC.
MANUFACTURERS OF
HIGH GRADE WARPS, SKEINS AND TUBES
FRANKLINTON, N.C.

DANA WARP MILLS
WESTBROOK, MAINE

SACO-LOWELL SHOPS

BOSTON • CHARLOTTE • ATLANTA • GREENVILLE

SACO-LOWELL CLEANING AND BLENDING RESERVE FOR PICKERS

Bureau of Labor Statistics Report on Wages, Etc., Interests Industry

Findings justify code authority's claims on wage, differentials, compliance, etc., says Sloan; Bureau didn't limit itself entirely to fact-finding

THE report of the Bureau of Labor Statistics on the wages, earnings and hours in the textile industry, of a study conducted under the terms of the Winant board of inquiry following the recent textile strike, and made public on January 19, constituted the development of chief interest in the industry during January. The published report referred only to the cotton-textile industry; the findings for silk, wool, etc., to be announced later.

The report was based on payroll records, etc., in a "sample" of 177 mills with approximately 100,000 wage-earners, for a week in August 1933 and August 1934; a smaller but still representative "sample", covering 38,000 workers was taken for a week prior to the code in July 1933. These mills were selected after consultation with the Cotton-Textile Institute and the United Textile Workers; in general the "sample" includes more than one-fourth of the people employed in the industry.

Neither detailed abstract from nor extensive comment upon the report is practicable here. Many statements susceptible to controversial interpretation were included. Generally, however, the report was considered thorough. A brief statement concerning its highlights, by George A. Sloan, chairman of the Cotton-Textile Code Authority, sums up the major facts developed in the study as follows:

1. That there has been "an overwhelming compliance" with the wage provisions of the Cotton Textile Code for all occupations of work;
2. That employment during the first year under the Code was in excess of 1929;
3. That the minimum wage has not become the maximum;
4. That, as required by the Code, differentials in occupations above the minimum have evidently been maintained;
5. That higher proportionate increases, as contemplated by the Code, have been made in lower paid occupations below the minimum;
6. That the tendency has been for hourly wages to so continue to advance from August, 1933, to August, 1934, both in the North and South;
7. That average hourly earnings have been raised more under the Cotton Textile Code than in any other major industry;
8. That in August, 1934, the workers in northern cotton textile mills were receiving average hourly wage rates at the level that prevailed in 1926 to 1928, and the workers in southern mills were receiving hourly wage rates substantially higher than at any time during the decade 1922 to 1932.
9. That between July, 1933, and July, 1934, average hourly earnings increased 64.5 per cent. In making this statement the Bureau disregarded the fact that wage increases in the industry were almost universal in the two or three months immediately preceding July, 1933. When hourly earnings in March, 1933, are compared with those set up under the Code, the increase amounted to 69 per cent and today it stands at 77 per cent above March, 1933;
10. That with reference to "learners" the percentage for males in August, 1934, is less than one-quarter of that prevailing before the Code and for women is only one-seventh as much as the percentage in August, 1933;
11. That under the Code there has been a steady decrease in the ratio of sub-minimal workers in each group as compared with the total number of persons engaged in the industry;
12. That "double-record" book-keeping is either non-existent or on so small a scale as not to affect the aggregate pay-roll figures; and
13. That in almost all mills studied there has been no change in rents to offset wage increases.

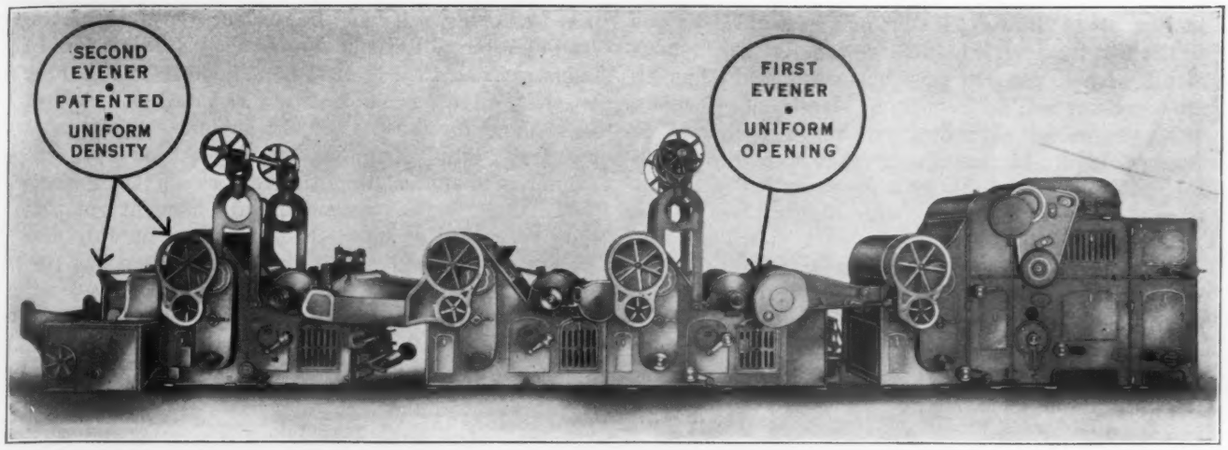
Mr. Sloan continued:

"Other facts not brought out in the Bureau's report but which have an important bearing on employment and wage conditions in the industry are:

a. That during the first 12 months under the Code, the industry's total wage bill was increased by approximately $105,000,000;
b. That when the industry proposed the first Code under N. I. R. A. with the resultant tremendous increase in labor costs, it was not anticipated that the Government would apply a processing tax to the industry's products. This tax became operative almost immediately after the effective date of the Code and resulted in an added cost of production of $145,000,000 during the first year of the processing tax, including the floor stock tax—an amount equal to almost 50 per cent of the industry's annual wage bill.
c. That normally about 35,000 of the industry's workers are employed in production for export. As a result of increased labor costs under the Code, exports of cotton goods have fallen off approximately 50 per cent.
d. That domestic consumption of cotton goods was 13 per cent lower in 1934 than in 1933.

"The Bureau of Labor Statistics report leaves unchallenged the findings last June of the Research & Planning Division of the NRA that under the Cotton Textile Code actual weekly earnings adjusted to cost of living are at least as high as in 1929. This is in spite of the great decrease in working hours as compared with pre-code conditions.

"The Bureau report brings out that the actual weekly earnings in August, 1934, were lower than



Lower Costs and BETTER LAPS

It is practically axiomatic that one process picking reduces cost of production, handling, power consumption, etc., but the advantages of H & B One Process Picking do not stop here. This system also produces BETTER LAPS.

Much of the latter advantage is due to the H & B patented two-fold method of evening. The first evener, working in conjunction with the feed rolls, provides uniform opening; the second evener, working in conjunction with the calender and cages, provides uniform density throughout. Once the cotton enters the feed section, it remains in sheet form, so that the evening is an uninterrupted process. There is no intermediate hopper to nullify the first evening.

As a result H & B One Process Picking has an average productive efficiency of over 99 percent, and H & B laps vary less than 3/8 to 3/4 of an ounce from yard to yard. One mill reports only 4 laps out of 700 had to be reprocessed; in another case only 4 laps out of 2500; and in a third case only 5 laps out of 1300.

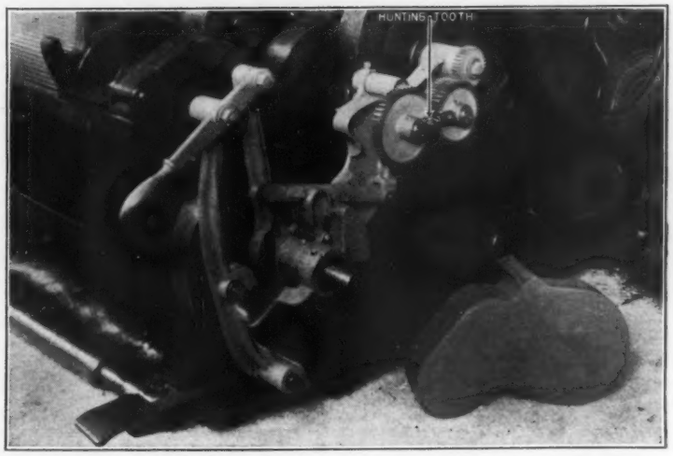
The H & B One Process Picker is also equipped with a hunting tooth, automatic knock-off and measuring device, features of which are easy starting, quick changing for any desired yardage and greater accuracy than any similar mechanism on the market.

Why not modernize your plant with this low cost and quality improving process? Write for details. No obligations.

H&B

H & B AMERICAN MACHINE CO.
Cotton Preparatory and Spinning Machinery
PAWTUCKET, RHODE ISLAND
•
BOSTON OFFICE: 161 Devonshire St.; ATLANTA OFFICE: 815 The Citizens and Southern National Bank Bldg.

ONE PROCESS PICKER



AUTOMATIC KNOCK-OFF AND MEASURING DEVICE

in August, 1933. As a matter of record this was due to the fact that August, 1933, was an abnormally busy month with 40 per cent more business than in August, 1934. However, in February, March and October, 1934, the weekly earnings were higher than even in August, 1933. In fact, the average weekly earnings for the whole year 1934, with the exception of the abnormal mid-summer slump, were higher than for the 1933 code period.

"The Bureau refers to cotton textiles as a low wage industry. This is characteristic of the cotton textile industry throughout the world, largely because of the character of the work, and the fact that its product goes into low cost consumption. The report might have mentioned, however, that cotton textile wages in the United States under the Cotton Textile Code are far higher than in any textile producing country in the world—witness our vanishing export markets during the last eighteen months.

"In considering the wage scales of the industry, past and present, it must be remembered that the Bureau of Internal Revenue figures show a deficit for the industry from 1926 to 1931 of $77,000,000. A survey by the Cotton-Textile Institute reflected a deficit of $60,000,000 for the year 1932. Moderate earnings in the first twelve months of the code period were due primarily to appreciation of inventory and the Federal Trade Commission's recent findings brought out that the industry was again losing money in July and August, 1934. Unfortunately that situation has persisted."

(In addition to Mr. Sloan's excellent comments, it is clear from a thorough reading of the report that those in charge of the study exceeded their instructions merely to find facts, and made gratuitous observations and some recommendations beyond the scope of their commission. Minor infractions were emphasized; strong evidence of compliance appeared to be disposed of by mere mention, certainly without the undue emphasis placed upon individual variations from code principles.)

Sloan Analyzes Federal Trade Commission Report on Textile Industry . . .

Analysis of the Federal Trade Commission's preliminary report of its study of the investment and income status of the textile industry points to a probable loss for the cotton textile industry as a whole during the last half of 1934, according to George A. Sloan, chairman of the Cotton Textile Code Authority. The study was ordered by President Roosevelt following the recent textile strike.

The Board's report covering 1933 and only 8 months of 1934 and based on returns from less than one-half of the operations of the cotton industry, shows losses during July and August, 1934—the two months immediately preceding the textile strike—as against some profit during the first 6 months which reflected, in part, the effect of appreciated inventories.

With the factor of enhanced inventories eliminated, the industry, Mr. Sloan emphasized in a recent statement, relied for profits on the margin between actual operating costs and prices for its products with the result "the industry was unable even to earn interest on its borrowed capital."

"The Code Authority", continued Mr. Sloan, "has deemed it of vital importance to bring the facts as to the condition of the industry up to date by securing the financial returns from it for the whole of the last six months of the year. This is deemed particularly important because the margin between raw material cost and selling price, out of which manufacturing costs have to be paid, has during this period, narrowed to alarmingly close figures compared to the past. The Code Authority has therefore urged upon the Federal Trade Commission the desirability of completing its studies for the last six months of the year during which the distorting figure of inventory appreciation has been substantially lessened or eliminated".

The text of Mr. Sloan's statement is as follows:

"The cotton textile industry has welcomed the study of the financial operations of that industry by the Federal Trade Commission. It will read with great interest the preliminary report of the Commission, and is looking forward to the development of facts which will be made by further analysis of returns and from further investigations which it is hoped the commission will carry on.

"There are certain outstanding features in this report.

"1. It covers less than one-half of the operations of the cotton textile industry. It is so confined because these were the only mills where figures were available on a strictly comparable basis. It is to be hoped that the further work of the commission will enable it to make a further report giving a picture of the industry as a whole.

"2. While no final conclusions can safely be drawn from figures based on less than one-half of the operations of the cotton textile industry, still the indications from the commission's report are that the industry is emerging under the recovery program from the long period of depression which has afflicted it. The only previous figures available are those derived from income tax returns from 1926 to 1931, inclusive. The returns for that period of six years show that aggregate losses amounted to $77,478,000 and such information as is available for 1932 indicated a further net loss of approximately $60,000,000.

"3. The Federal Trade Commission in its report of earnings does not distinguish those earnings which were made as a result of inventory appreciation of cotton and finished goods, as the result of the period of rising raw material and finished goods prices, which set in with the beginning of the recovery program in March, 1933. Inventory enhancement was bound to be important for the reason that raw cotton underwent a rapid and substantial increase in value under the crop restriction program. Even with the processing tax deducted, the value of raw cotton increased between March and August, 1933, to the extent of 40 per cent. It is probably impossible to segregate these profits resulting from the higher value of inventory that occurred in 1933. They should be regarded in a measure as a recoupment of inventory losses that occurred during previous periods of declining raw material and finished goods prices.

"4. The losses which the half of the industry covered by the report sustained in the last period covered by the report, namely, July and August, 1934, are disturbing because during that period the effect of profit from rising inventories was substantially eliminated and the industry had to rely for its profits, if any, on the difference between its actual operating costs at current prices and the current prices which it was able to obtain for its product, with the result that instead of a profit there was a loss so that the industry was unable even to earn interest on its borrowed capital. The Code Authority has deemed it of vital importance to bring the facts as to the condition of the industry up to date by securing the financial returns from it for the whole of the last six months of the year. This is deemed particularly important because the margin between raw material cost and selling price, out of which manufacturing costs have to be paid, has during this period narrowed to alarmingly close figures compared to the past. The Code Authority has therefore urged upon the Federal Trade Commission the desirability of completing its studies for the last six months of the year during which the distorting figure of inventory appreciation has been substantially lessened or eliminated.

"5. In determining the rate of profit on value of investment it is, of course, vitally important that the base of the value of investment should be accurately determined. From such information as was available to the industry there were strong indications that by reason of write-offs and ultra-conservative methods of dealing with capital accounts the book value of the facilities of the companies had been written down to figures far below both original cost and present value. One test of this is the very excellent appraisals made by the fire insurance mutuals for many mills for insurance purposes and used as a basis for payment in the event of destruction by fire. It was believed that the examination of these appraisals would show that the book value of the investment was thus very materially below the actual value and the Federal Trade Commission was requested to include this aspect of the situation in its investigation. As the Commission did not find it practicable to do so, some investigations were undertaken by the industry itself along these lines which went far to confirm this impression. It is hoped that the Commission itself may find it possible to supplement its present work with a thorough and authoritative examination along these lines. It is bound to show that the book value figures as reported and used by the commission are highly conservative, and it is believed it will show that the actual value of the investment, both from the standpoint of original cost and present value, is materially in excess of that now used as a base.

"6. It is believed that the work of the Federal Trade Commission demonstrates the value to an industry of authoritative current studies of its financial situation, and the industry very much appreciates the work which the commission has already done and looks forward to its completion."

...and now!

a LOCKSTITCH

by UNION SPECIAL

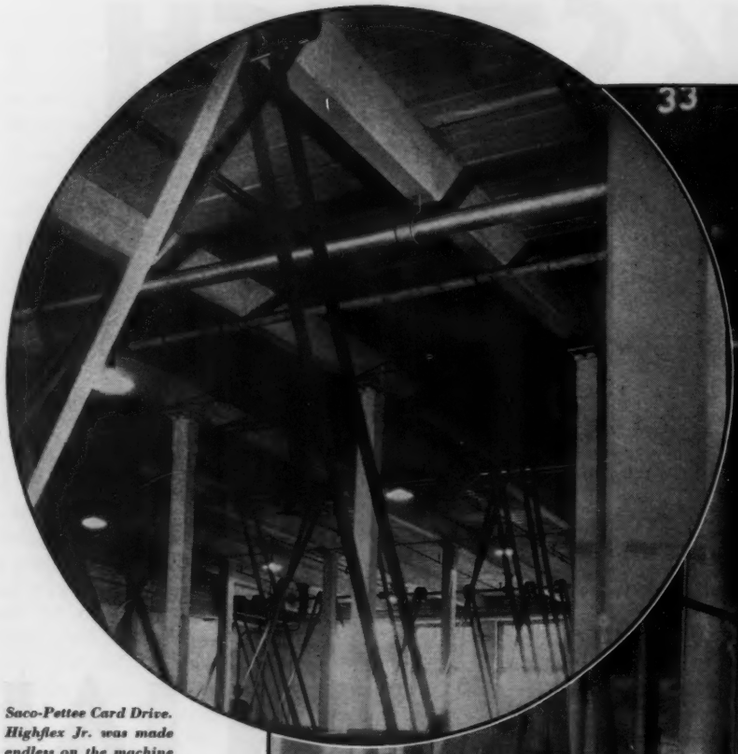
IN the development and production of this new machine the one thought uppermost in the minds of this organization has been that there is no need for "just another" lockstitch machine, but that there is a need for a machine of superior design and construction.

For over half a century Union Specials have been the pacesetters—the basis of comparison because of their dependability, efficiency and economy. The pattern of superiority was laid on the "cloth" for the new Lockstitch and truly it is a Union Special. When you see it you will realize that a new standard has been established for lockstitch operations.

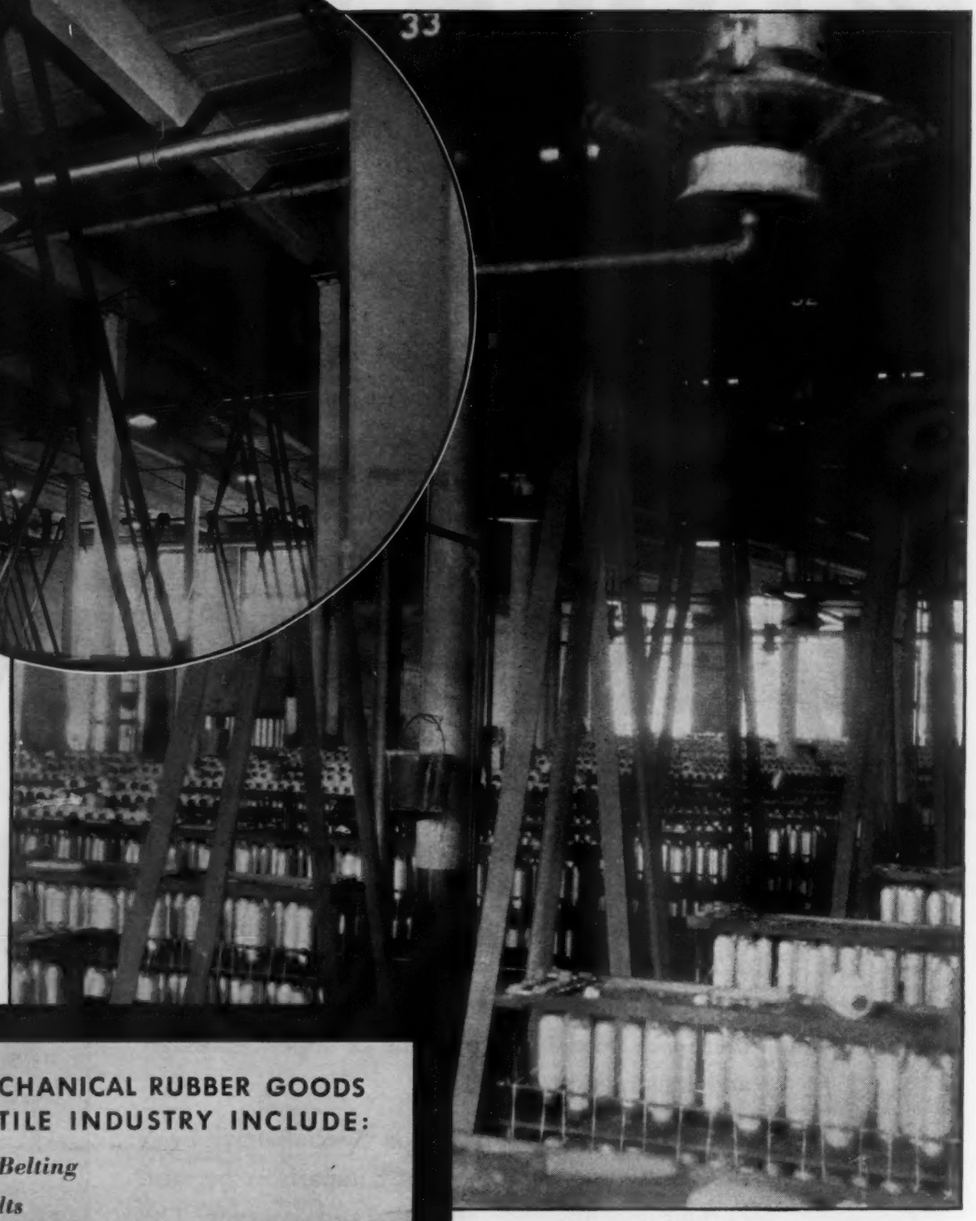
Stamping the number "1" on the first Lockstitch machine to leave the Union Special factory.

UNION SPECIAL MACHINE CO., 400 N. Franklin St., Chicago, Ill., U. S. A.

How SERIOUSLY DO YOU



Saco-Pettee Card Drive. Highflex Jr. was made endless on the machine in this instance and has given perfect service.



Every belt in this spinning room is Highflex Jr., selected because it maintains tension and delivers higher and more uniform speed.

GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:

- *Transmission Belting*
- *Multiple-V Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

ALL *products problems* IN RUBBER

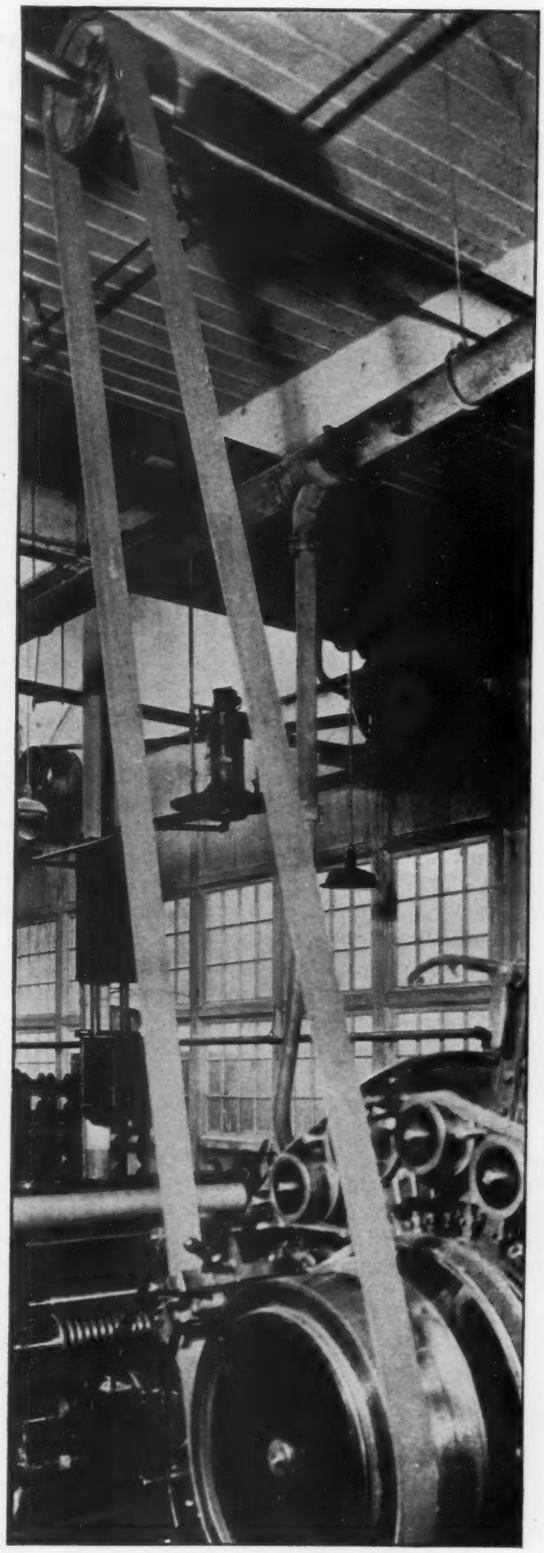
WANT TO INCREASE PRODUCTION?...

SCORES of mills have switched from leather or ordinary rubber belts to Highflex Jr. and *in every one production increased, costs went down.* You can have the same result and you can be certain of it in advance. Here's the reason:

Open a roll of Highflex belting in the mill. In 48 hours it has shrunk and is conditioned for life. Cut it, put the lengths on your drives, and for years those belts will run with little or no take-up or attention, maintaining absolutely uniform tension, delivering higher and uniform speed. As the result of a change to Highflex belts a 2% increase in production is common, a 100% return on belt investment is not unusual.

There is another important advantage, too. Because they are mechanically uniform, Highflex Jr. Belts prolong life of machinery by eliminating wobbling.

Lower first cost, no maintenance, increased production, reduced expense. If you want these advantages for your mill (and who doesn't?) you will investigate Highflex Jr. Belts at once. It's easy to do . . . just call your Goodrich Distributor. The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.



Whitin Model E Full Roller Top Waste Card showing main cylinder and stripper roll drives equipped with Highflex Jr.

Goodrich

Highflex Jr. Belting

CURRENT TEXTILE TOPICS ....

Talk of the Month

COTTON manufacturers approached February in a spirit of optimism for the immediate future, but with no false hopes regarding the long range of business. The underlying factors of normal character were favorable, both from the internal and the external points of view, naturally interrelated. In fact the interrelated position, that is the direct business of the cotton industry and the indirect influence of the general economic condition, was the most promising of the recovery to date. It was the spontaneous outburst of consumer spending at the end of 1934 that laid the foundation for a healthy start of 1935.

Prospects good at short range and uncertain for long future

January brought one of those extraneous developments involved in the government recovery program —the gold-clause issue—to cause a disturbance in the primary markets for cotton and unfinished cotton goods. Even this was not a real disturbing factor to the immediate outlook, however, because of the predominating influence of the situation in finished goods. Given a broad public buying movement and a depletion of merchandising goods in wholesale and retail circles, the immediate supply and demand position for manufacturers always is assuredly favorable.

Looking further ahead, the industry is at another cross-roads. The impetus of general business may carry recovery forward, in which event cotton goods manufacture will undoubtedly profit. There have been encouraging trends from the standpoint of industrial demand for cotton goods, the branch which has been sadly lacking through the depression, even in the spasmodic spurts of activity in this branch of textiles. The pick-up of automobile production is one distinctly favorable factor and if other industries, notably building, develop a healthy spring movement the reaction upon cotton manufacture is bound to be profitable.

Whether this development will be strong enough to swing the market and the industry along in spite of uncertainties in the labor and government relationships is what puts the cotton trade at the cross-roads for the long future. As for the labor position, Francis J. Gorman, first vice-president of the U. T. W., has been making constant threats of another general strike, in the face of dire consequences to the workers at many points from the disaster of the move last fall. Industrial leaders are inclined to accept Gorman's threats as the cry of "wolf, wolf", but the labor situation remains agitated and it remains to be seen what the administration attitude will be regarding this end of the program.

Among the things which the industry has claimed, and were substantiated by the late January report of the United States Bureau of Labor Statistics in an exhaustive document prepared in accordance with the terms of the "truce" on the September strike, was that real average weekly earnings of workers rose with the code. The report did find that wages of cotton workers were among the lowest paid in any major industry; also that the real earnings fell off through the time of curtailment last summer, to less than those a year before.

This brings the situation down to the issue of whether the cotton industry can be made to yield a larger income to the workers. There are a variety of factors involved in this problem, including the lack of normal business, the burden of government measures and the consumer market. The labor department report, it will be noted, followed one by the Federal Trade Commission a short time previous which demonstrated the fact that the cotton industry was a losing proposition in the poor period of 1934 and one of small return on invested funds in better times.

Buyers make prices for goods. Even the government cannot change this fundamental. The government has through various officials in recent months admitted the soundness of the profit motive in industry. At the same time, it has imposed burdens on the cotton industry which make it impossible to operate at reasonable capacity, giving widespread employment at the higher wage rates under the code, because these burdens are costs which raise the market (if profitable prices are named) to levels which the ultimate consumer will not pay. The processing tax, on top of artificial support for cotton at a high level, leaves cotton goods without a fair competitive position in the textile markets.

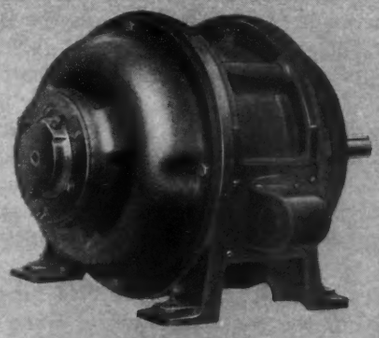
Conditions of government relationship with industry are changing from the emergency character to permanent, with the period of the NRA coming to a close in June. The cotton industry from the first has shown itself ready to co-operate with the Administration, but it has run into obstacles arising from conflicting measures of different departments in the government. A partnership to survive must be one of mutual support. Thus the long future for cotton manufacture depends not only upon broad economic recovery, but upon the course which the Administration takes upon the labor, processing-tax and foreign-trade questions affecting cotton manufacture.

ON January 15, the stockholders of the Hamilton Woolen Co., Inc., Southbridge, Mass., employing more than 1,000 workers, overwhelmingly approved the decision of the management to close permanently and liquidate the property because of a strike at the plant and other labor difficulties. This case was commented upon in detail on this page last month. Of a total of 30,850 shares of stock, 27,404 shares voted, and of the latter number, 26,589 shares voted in favor of liquidation. As was stated here last month, the forcing of

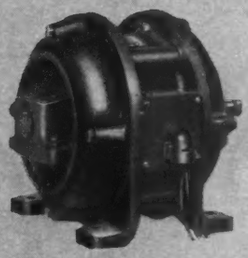
Hamilton Woolen to Liquidate Because of Strike

Prepare for Greater Profits

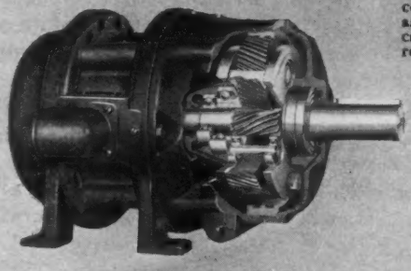
Modernize Now with these Modern G-E Drives



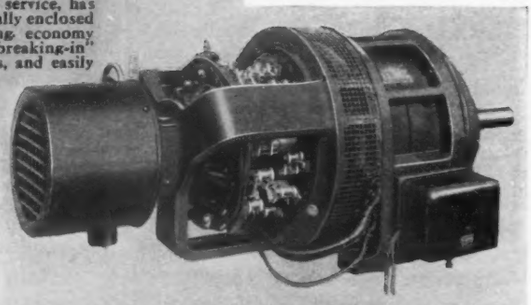
FOR DRIVES AMID LINT AND DIRT... the G-E screenless, open textile motor can be used with confidence. Because of its large, unobstructed air-passages and its directive ventilation, this motor discharges the extraneous matter drawn in with the ventilating air.



FOR YOUR LOOMS... this G-E motor, designed especially for such service, has many important features—totally enclosed construction, good operating economy and power-factor, ample "breaking-in" capacity, large oil reservoirs, and easily repacked bearings.



FOR YOUR LOW-SPEED DRIVES... the G-E gear-motor provides a compact, low-speed unit, ready for direct connection to your machines. Available in speeds from 11 to 600 rpm., in sizes from 1/6 to 75 hp.



FOR FINISHING MACHINES... if your power is a-c., you can use either the Type BTA motor (above), which offers you the desirable adjustable-speed characteristics of a d-c. shunt-wound motor, or, with suitable conversion equipment, the dependable Type B direct-current motor shown below.

THE right kind of modernization soon pays for itself—and then adds to profits. Investigate the worth-while additions which modern G-E drives can make to *your* profits.

The drives illustrated here, together with a wide variety of other motors and control, as well as wire, cable, transformers, etc., are all available in the *complete G-E line.* From it you can obtain the *right* equipment for every electrical application in your plant.

Moreover, you'll find G-E sales and engineering offices, service shops, and warehouses conveniently located near every textile center—all at your service, ready to "follow through" on every detail of your electrical requirements. For particulars, address the nearest G-E office; or General Electric, Dept. 6G-201, Schenectady, N. Y.

There's a size and type of G-E control built to match exactly the requirements of every G-E motor.

020-62

GENERAL ELECTRIC

the issue here may prove helpful to all textiles; but the worst phase is that a minority of disturbers were capable of wrecking opportunity for the larger group of workers to earn a livelihood. The case serves—or should serve—as a warning to textile employees elsewhere not to be misled by outside agitators, union and otherwise, to take a stand contrary to their own selfish interests.

New England Mill Situation

THIS New England district, not the textile industry but the community at large, has become duly alarmed. That is the biggest note of the current year in the cotton industrial situation of New England. The aftermath of the September textile strike has been long and very serious in many cases. Public spirit has been aroused. While the outstanding disaster is the apparent loss by Southbridge, Mass., of a woolen plant that was the second largest industry of the town, the agitation of the U. T. W. has gone far toward estranging investor interest in the cotton industry of the section. To be under the constant threat of labor difficulties when profits are already dubious because of other unsatisfactory conditions is hardly inviting to investors.

On the other hand, the textile industry is the life blood of many a small community in New England and there remain the great centers like Fall River and New Bedford where cotton manufacture is the outstanding industrial support. Thus it is not surprising, nevertheless very significant, that outside interests are making a concerted and widespread investigation into the conditions of textile manufacture in the section. The formation of a new group under the New England Council, instigated by a meeting of business men, bankers, cotton manufacturers and secretaries of Chambers of Commerce from 70 communities, to make such investigation gives promise of important results.

This concerted move follows in sequence a number of independent moves by citizen groups in various communities toward relief of intolerable conditions and the safeguarding of industries which are economic factors of great consequence to the localities involved. In fact, public attention has been focussed on the general industrial unsettlement and certain developments of encouraging nature, notably in the shoe industry, are a possible criterion of what to expect in the textile manufacture. One of the weaknesses of the manufacturing position is that labor agitators have been able to spread propaganda far and wide, while it appears that workers who want work have been starving for true facts and do not get them.

New England, by virtue of its long maturity in industry, has been forced into a position of disadvantage in competition with other regions. Incidentally, the country now stands in a similar relationship to the Orient. The public, through legislative bodies in New England, has worked constantly for the protection of labor and even has made conditions that have driven business to other regions because of the high standards here. That does not mean that conditions are ideal and that labor may not look for more benefits in the future, but it does mean that the section must give consideration to competitive conditions as well as social welfare.

Before the September strike it was cited that mill workers in the majority of cases realized that their position, aside from the vicissitudes of business, had been improved under the code. They were getting some work where for years in many cases the industry could offer almost nothing. In spite of this, they were forced into new idleness by the inordinate and abusive power of a disturbing and relatively small group of agitators. Mill business was lost and the aftermath was that many mills had to wait weeks for new orders. Important mill units were lost irretrievably and others at least into temporary idleness.

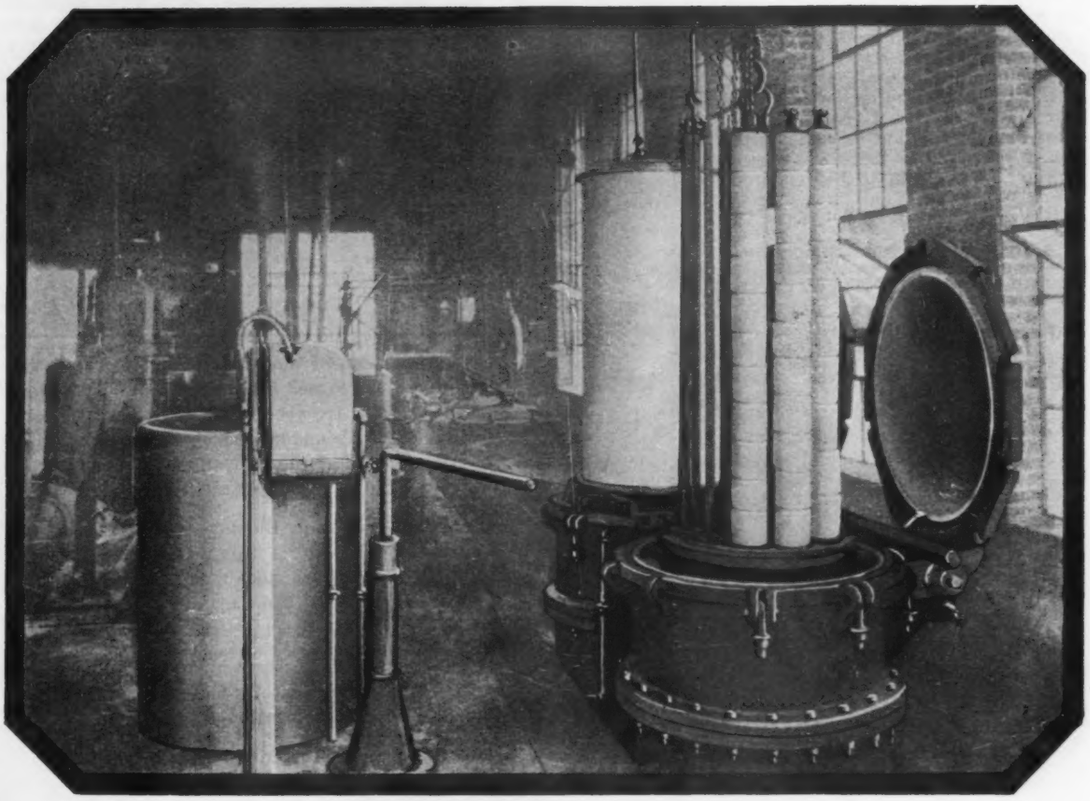
Workers in two important shoe communities of Massachusetts finally have seen the light and accepted wages that can be paid, rather than hold for those that were driving the source of their income elsewhere. Bishop James E. Cassidy, of the Catholic diocese of Fall River, known as a great friend of mill labor, struck a sane note in a New Year's message to workers that has gained a wide hearing. For one thing, he said that "many a ship has been scuttled by its crew and as a life-long friend of labor, I say to those who lead: Beware lest you scuttle your own ship; beware lest in trying to sink the captain you sink likewise the crew; beware lest you kill the goose that lays the golden egg".

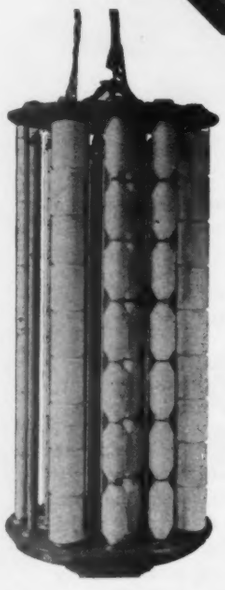
Further than that, he reminded the workers that most of them cannot, like the "flying squadrons", come and go and flee when the damage is done, leaving behind closed mills and starving people. He recognized the international competition faced by the mills, while not overlooking the struggle for justice to workers, saying:

"Here in our own community, realizing that the cotton industry all over the United States is engaged with foreign nations in a death struggle for continued existence thereby being of necessity for the present at least a low-wage industry compared with other more favored industries, I plead with my people to be prudent, to be patient, to be even over-long-suffering, to avoid violence, to cooperate fully with every fair employer, to strive faithfully, continuously yet judicially, for the correcting of the unfair or for his expulsion from the community and thus improve, increase and retain what we have got and make our city and our diocese a place attractive for capital dealing with labor."

Mill business in New England had its pick-up in New England as elsewhere before the end of 1934 and is encouraged for this year by reason of the strong tendency in finished lines. The code has been a very potent influence for good, said Frank I. Neild of the Neild Manufacturing Corporation of New Bedford, and its benefits will be more evident as conditions improve. The industry will receive its share of the benefits of any general business gain, said Ernest N. Hood, president of the National Association of Cotton Manufacturers, but he warned that "continued sounding of the clarion call to battle" by U. T. W. leaders seeking to "fatten their own purses at the expense of the mill workers" would "only serve to keep everyone in the textile industry in a nervous condition".

Modernizing Your Dyeing Equipment is Sound Economy





MEASURE the value of your present dyeing equipment by present-day demands for economy and efficiency in production and quality and beauty of product. By interpreting the needs of the industry, through constant experiment and developing, and with 15 years **specialization** in dyeing machinery and equipment, the Gaston County Dyeing Machine Company has modernized many dye plants on a true basis of continued sound economy and efficiency. We are the

Originators of Machines for Dyeing Roving

The Combination Roving and Dyeing Machine shown above makes it possible to get many new novelty color combinations in spinning. With it you can dye roving bobbins and package yarns in the same machine, effecting a great saving in material and time when running sample or small orders as compared to running them from dyed raw stock.

Ask any one of the many outstanding mills throughout the country what they think of Gaston County Dyeing Equipment.

Write for information and list of users.

GASTON COUNTY DYEING MACHINE CO.

Manufacturers of Dyeing and Drying Machinery Only

Main Office and Plant: STANLEY, NORTH CAROLINA

Address all correspondence to our main office

INVENTORS AND MAKERS OF

Beams and machines for Beam Drying, Beam Winding, Beam Dyeing, Package Drying, Bleaching on Beams and Packages, Roving Dyeing, Roving Drying and Vacuum Extracting Machines.

COMMENT ON THE COTTON MARKET

New Orleans, January 18th, 1935.

THE cotton market ruled comparatively steady during the better part of period under review, or until uneasiness developed as regards the uncertainty attending the "gold clause" case; the court decision on which is awaited with much interest by the trade and financial world. Cotton values of late, therefore, were under pressure. The downward trend of the market was checked, however, by the announcement that the government will limit tax free ginnings of the 1935 crop to 10,500,000 bales, plus 1934 certificates for about 700,000 bales, which, all told, is expected to provide an American crop this year of about 11,500,000 bales of 500 pounds gross weight; weather permitting. The program for a limited crop this year caused the market to bulge temporarily, but as spinners' takings of American continued light, and as there was a renewal of uneasiness concerning the decision to be rendered by the United States Supreme Court in the important "gold clause" litigation, values eased again.

WORLD'S CONSUMPTION OF COTTON

Estimate—Bales—	This season	Last season
American, during November	1,007,000	1,197,000
Foreign, during November	1,126,000	953,000
All kinds, during November	2,133,000	2,150,000
American, 4 months	3,912,000	4,857,000
Foreign, 4 months	4,229,000	3,643,000
All kinds, 4 months	8,141,000	8,500,000

As noted by returns for November, the world continues to use less of American and more of foreign cotton, and this condition will likely continue as long as the price of American is held at a price relatively dearer than foreign growths, or unless the supply of the foreign product becomes scarce.

BRITISH BOARD OF TRADE REPORT FOR DECEMBER

Year—	1934	1933	1932
Exports of yarn, pounds	10,000,000	11,000,000	12,000,000
Exports of cloth, yards	161,000,000	156,000,000	196,000,000

UNITED STATES CENSUS REPORT FOR DECEMBER

U.S.—Bales—	This season	Last season
Consumption of lint in Cotton Growing States	330,000	283,000
In New England States	67,000	56,000
In all other States	17,000	9,000
In United States, in December	414,000	348,000
Consumption in Cotton Growing States, 5 months	1,705,000	1,933,000
In New England States	334,000	411,000
In all other States	89,000	71,000
In United States	2,128,000	2,415,000

RECEIPTS, EXPORTS, SPINNERS' TAKINGS AND STOCK AT UNITED STATES PORTS

Aug. 1 to Jan. 18—Bales—	This season	Last season
In sight (marketed) since Aug. 1st	7,298,000	10,272,000
Exports from U. S. since Aug. 1st	2,837,000	4,752,000
Spinners takings since Aug. 1st	5,658,000	7,724,000
Stock at all U. S. ports Jan. 18th	2,930,000	3,888,000

WORLD'S VISIBLE SUPPLY OF COTTON, JANUARY 18

Bales—	This year	Last year
American	7,248,000	9,302,000
Of other kinds	1,964,000	2,010,000
Of all kinds	9,212,000	11,312,000

As yet, due mainly to the relative dearness of the American product, foreign spinners continue to take largely of foreign cotton at the expense of American, but the parity between the price of American and outside growths is narrowing. The parity may continue to narrow, which would likely make American more attractive to foreign spinners and tend to improve the demand for American, especially if an international agreement as to exports and prices, is entered into.

In some quarters it is thought that the government may not put a loan value on the crop of 1935, but some doubt was expressed as to such a move being taken following the announcement that the Senate agricultural committee had approved a 100 per cent increase in the agricultural crop loans, raising the total to $100,000,000 from $50,000,000.

Subsequently the Washington administration was reported as working toward an international agreement aimed at the stabilization of cotton exports and cotton prices. The proposed pact might be patterned along the lines of the international wheat agreement, aimed at the control of surpluses. The wheat agreement, however, broke down when Argentina failed to abide by its quota. President Roosevelt has assigned the task of negotiating for an international cotton agreement to Secretary Wallace. Negotiations are to be carried on with India, Egypt and Brazil in an effort to stabilize cotton exports and maintain fair prices for American farmers who now produce about half of the world supply of cotton.

The trade is much interested in efforts of the President to foster disposal of surplus cotton, principally through exports, but not a great deal of optimism is found in the outlook for a world agreement on acreage reduction. Foreign countries are growing cotton at a cost much lower than the 12 cents loan value on American, consequently are increasing their acreage, and underselling the South.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

	This season	Last season	Normal
For December	1.85	1.91	2.19
Nov. and Dec. inclusive	5.86	3.04	3.23

As to the future course of values, while the European political situation seems better, much will likely depend on further developments in Washington, on domestic and international trade conditions, and on whether or not the government puts a loan value on the 1935 crop.

WHAT THE SOUTHERN MILLS ARE DOING

THE Hunter Manufacturing & Commission Company have purchased the properties and assets of the Pomona Mills, Inc., Greensboro, N. C., at receiver's sale, for $649,000. It is understood operations will be resumed, and the new name of the company is Pomona Mfg. Co. Donald Comer has been made president.

Burlington Mills, Burlington and Greensboro, N. C., have purchased the Gloria Textile Mills, Johnson City, Tenn., for $200,000. New machinery will be installed, at an expense of $250,000, for manufacturing fine rayon woven fabrics.

Gossett Mills, Anderson, S. C., have awarded the contract for the erection of a 65-foot extension to the Ladlassie plant of this organization at Anderson.

Wampum Cotton Mills, Lincolnton, N. C., have started operations under new management. It was recently purchased by W. W. Glenn and associates, and is now known as Threads Spinners, Inc.

Klein Bros. of New York City, have acquired a building at Bedford, Va., and will operate a silk goods manufacturing plant there.

Associated Properties, Inc., an organization of Rossville business men, have acquired the Park Woolen Mills, Rossville, Ga., and will resume operations.

Arrowhead Fashion Mills, Inc., Rossville, Ga., have been granted a charter to operate as a subsidiary of the Richmond Hosiery Mills.

Cooper, Wells & Co., hosiery manufacturers, Decatur, Ala., have recently added considerable new machinery.

Hudson Silk Knitting Company, Charlotte, N. C., has purchased eight acres of land and will start at an early date an investment of approximately $350,000 in the first unit of its silk hosiery manufacturing department; the plant will be 150 x 110 feet, and 30 full-fashioned machines will be installed. The new concern is headed by M. E. Pierson and F. Seifart, of the Hudson Silk Hosiery Co., but will be operated separately

A charter was recently granted to the Caldwell Hosiery Mills, Inc., Granite Falls, N. C., to manufacture and sell hosiery.

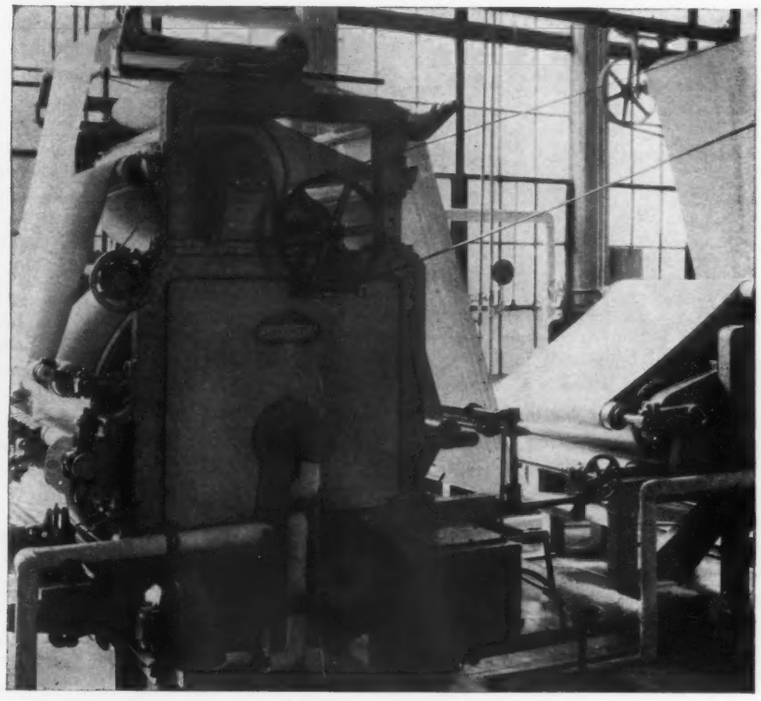
It is reported that the Larkwood Silk Hosiery Mills, Charlotte, N. C., will double their capacity.

Bearings That

REDUCE FRICTION

lower operating costs

● SKF makes practically *all types of anti-friction bearings.* When SKF recommends a particular type of bearing, therefore, you may depend upon it; its recommendations are *unbiased!*



SKF-EQUIPPED..BUILT BY H. W. BUTTERWORTH & SONS CO., Inc.

When Butterworth attacked Friction in their Sanforizer, they specified 82 SKF Ball Bearings to do the job.

They installed 15 SKF's on entering draw rolls; 29 in the drive shaft, pinion stud, blanket rolls and gear box of the Palmer, and 38 in the gear box, entering rolls and pressure rolls of the polishing machine. They received precision . . . low-cost operation . . . less friction . . . qualities that enable this machine to deliver from 40 to 80 yards a minute in pre-determining shrinkage of cotton piece goods. And what SKF has done for Butterworth, it can do for you. SKF is the pioneer textile bearing that's built up to industry's demands . . . *your* demands . . . for bearing dependability.

SKF

BALL AND ROLLER BEARINGS 3325

SKF INDUSTRIES, INC., Front St. & Erie Ave., Philadelphia, Pa.

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

New Design Shear

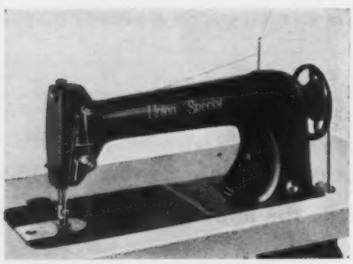
The Hermas Machine Company, Hawthorne, N. J., have introduced a new type of design of shear; whereas in the past there have been two types—one vertical and the other horizontal—the general contour of the new machine is in the form of an A or inverted V. The new machine, made at present in 48-inch size only, effects saving in floor space and operating economies, it is explained. It may be put in tandem with rolling and brush equipment, making a satisfactory brush and shear combination. Provision is made for inspection of the goods after they leave the first pair of knives.

A unique guard system for the knives is used. Each pair of knives is enclosed in a suction hood which guards the blades completely. The machine is available with any number of knives and brushes.

* * *

Union Special Announces New Line of Lockstitch Machines

After a period of exhaustive testing, the Union Special Machine Company, of Chicago recently announced its new line of lockstitch industrial type sewing machines. Although the features of this new single needle machine concern principally the performance and internal design, the exterior is of modern streamline appearance. Notwithstanding, the new machine is interchangeable with other makes in regard to mounting dimensions, power requirements, and working position. Where the type of work permits, the new lockstitch machine can be operated at speeds considerably greater than heretofore available.



New lockstitch machine . . .

Among the important new improvements now introduced for the first time in the lockstitch sewing machine is the employment of reciprocating mechanisms only at or near the needle; the other transmission parts are powerful rotary mechanisms. The transmission of power from the upper to lower shaft is through three precision cut helical type spur gears which eliminate bevel gears and vertical shafts. The transmission system is sealed and runs in oil. The feeding mechanism is positively driven through eccentrics and short connecting rods, thereby eliminating long pitman rods and rocker shafts. Bearing construction, throughout, is of the heavy duty type now being used on other late model Union Special machines.

Another novel feature of wide utility originally developed by this company for the Union Special double locked stitch machines, but now made available in the lockstitch line, is an air pump for cooling and cleaning the rotary hook combination. The rotary hook race-away is automatically lubricated from an oil reservoir to permit greater speed and simplify maintenance by reducing wear. The mechanism for driving the rotary hook has been simplified and the gears are run in grease.

* * *

Cordage, Twine and Duck Trade Directory

Davison Publishing Co., 50 Union Square, New York City, have issued the latest annual edition of "Davison's Cordage, Twine and Duck Trade", a complete directory of the industries embraced in this title, including listings of cordage, twine and duck mills, including bagging, clothes lines, fish lines, mops, oakum, packing, wicking; awning, tent and sail makers; cordage and twine jobbers; woodenware jobbers; fiber bag makers; hardware jobbers who handle cordage, twine, etc.; ship chandlers; and waste dealers. The directory is strongly bound in cloth covers with thumb indexes to each section, and is printed on coated paper. The price is $3.00 per copy.

* * *

New Air Hose

The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., have announced a new air hose, possessing to an increased extent the advantages of both wrapped duck and braided hose without their weaknesses, it is explained. In the new construction, for which patents have been applied. The unequal ply stresses set up in the wall of the hose by longitudinal and lateral tension incident with operation are compensated and made equal, by the unique construction which consists of two strength members, a braided cord for longitudinal stresses and a spiralled strength member for expansion and later stresses, both welded in tough age-resisting rubber.

* * *

Bakelite Thread Tube

The Lyseth Thread Co., Worcester, Mass., are winding cotton thread on Bakelite molded spools which, it is pointed out, are accurate to .005-inch. It is claimed that this type of spool makes it possible for the winding mechanism to function properly; permits the operator to use the last inch of thread: resists rough treatment in shipping and handling; and prevents the thread from catching. The construction, it is explained, makes it impossible for the operator to place the spool wrong side up.

Yarn tubes of Bakelite . . .

* * *

"Card Grinding Talks" by Dronsfield

Dronsfield Brothers, Limited, Atlas Works, King St., Oldham, England, have issued a new brochure entitled "Card Grinding Talks", which is of particular interest to carding operatives and students, and is available to them. The booklet discusses every type of card grinding in modern practice, and contains five sections on "All about Emery", "Cylinders, Doffers and Flats". "Flat Grinding—Off the Card", "The Licker-in and other Saw-tooth Rollers", and "The Re-Vitalization of Cylinder and Doffer Card Clothing by Re-Needle-Pointing".

* * *

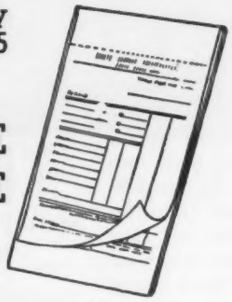
Birch Brothers Issue New Catalogs

Birch Brothers, Inc., (Somerville Machine Works), 32 Kent St., Somerville, Mass., manufacturers of textile finishing and dyeing machinery, have recently prepared two new catalogs covering their line of equipment. One deals with finishing machinery used by cotton finishers, felt manufacturers, silk finishers and pile fabric mills. The other covers finishing machinery used

ENVELOPES

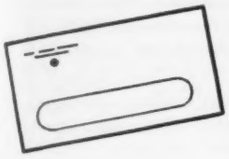
All Commercial Types, manufactured properly and delivered promptly.

For Textile Mills and Any Plant Employing Over 25 Persons.



The FOUR-IN-ONE PAY ENVELOPE
(PATENTED)

Over 98% of firms who once try the Four-In-One re-order! It is (1) a time and wage statement, (2) a deduction statement, (3) an employee receipt, and (4) a pay-roll envelope.



MONEY-SAVING WINDOW ENVELOPES

For statements and many other uses, these transparent carriers save you time and money. Samples on request.

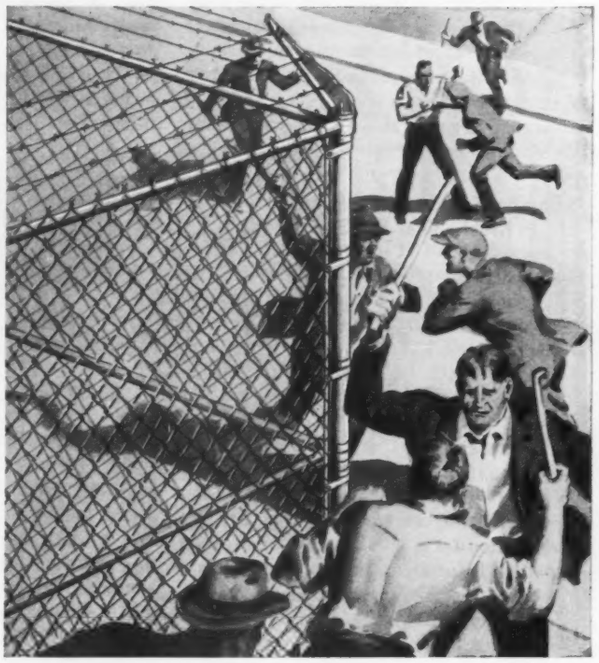
Our Envelopes Are Made Right--in the South!

It is the Job of Atlanta Envelope Company to Effect Envelope Economies for Our Customers

ATLANTA ENVELOPE COMPANY

505-7-9-11 STEWART AVE., S. W.
ATLANTA, GA.
ESTABLISHED 1893

Unfenced next door



But CYCLONE FENCE KEEPS OUR PLANT SAFE

"Originally we put that fence up to stop petty thieving by having complete control of exits and entrances.

"Then we found it allowed us to put one of our night watchmen on a new job as warehouse man. The fence allowed us to keep our weather-proof stock in the yard thus providing added storage space.

"Next we noted we had no more loafers or unwanted visitors, thus avoiding possibility of injuries and consequent liability.

"Then came that riot in the next plant—but we needn't go into that.

"Our fence has been up several years now and apparently will be up for many more. That means the cost per year is and will be very small. It paid us to check over the claims, reputation and prices of Cyclone Fence Company before we had this fine job installed by a trained Cyclone crew and with no worry to ourselves."

A Cyclone Chain Link Fence, in spite of its low cost, provides a permanent safe-guard, with virtually no upkeep expense. You may become familiar with its many advantages without obligation. Today, write for complete information. Address Dept. C.

CYCLONE FENCE COMPANY
General Offices: Waukegan, Illinois

SUBSIDIARY OF UNITED U.S. *STATES STEEL CORPORATION*

BRANCHES IN PRINCIPAL CITIES
Pacific Coast Division
Standard Fence Company, Oakland, Cal.

Cyclone—not a "type" of fence, but fence made exclusively by Cyclone Fence Company and identified by this trade-mark.

Cyclone Fence
REG. U.S. PAT. OFF.

by woolen and worsted mills, felt manufacturers, silk finishers and pile fabric mills. Circulars of each of the company's products in these respective lines are arranged in the catalogs in alphetical order according to the process the machine performs; and the catalog is so arranged that subsequent circulars may be conveniently added.

* * *

Engineering Data Book on Mechanical Rubber Goods

A new book of engineering data, designed to simplify the selection of belting, hose, and other mechanical rubber goods for industrial service, has been compiled by The B. F. Goodrich Company, Mechanical Division, Akron, Ohio. The book contains 21 pages of useful information and describes over 200 rubber items. Included in the section on transmission belting is a discussion of the relative merits of rubber and leather, a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure.

Supplementing the information on conveyor belting, hose, rubber lining and many other products are glossaries, tables and technical data.

* * *

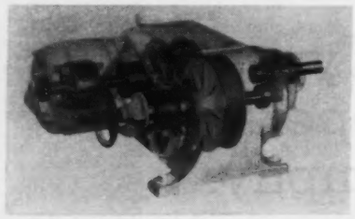
New Bulletin on Electric Neutralizer

A new bulletin on the Chapman electric neutralizer has just been published by U.P.M.-Kidder Press Company, Dover, New Hampshire, manufacturers of "Three Point" presses and other printing equipment. This bulletin describes how, through passing an alternating charge over the surface of the paper, the neutralizer prevents such troubles as the roving winding around rub rollers in woolen card rooms and breaking down of the web in cotton carding. The manufacturer claims that the neutralizer effectively acts similar to a humidifying system in removing the cause of the repulsion of fibers and the attraction of fibers for metal parts of the machines. The neutralizer is also offered for use in removing static from cotton pickers, unwinders, napping machines, burr pickers, felt cards, etc.

The equipment itself consists of a power unit, inductor bars and connections between the two. With alternating current, the electric neutralizer needs only a transformer for stepping up the supply voltage to 12,000 volts—at the same time stepping down the current to 1/100th of an ampere or less, thus making it absolutely safe. With direct current, an inverted rotary converter or alternator is used, driven by direct current or belt from mechanical power. It is said that the neutralizer requires little more current than is consumed by an ordinary light bulb.

Varidrive Motor

U. S. Electrical Manufacturing Co., 1533 So. Western Ave., Chicago, Ill., have announced a new development in variable speed drive, illustrated herewith in phantom view showing the principle of the Varidrive motor. The illustration shows a new lever arm



Phantom view of Vari-drive . . .

construction developed for larger horsepower ratings, and how the formerly separate units consisting of a constant speed motor, a variable speed device, and a gear case have been built into one compact unit; with the elimination of mounting bases and transmissions, such as couplings, fans and belts between the component parts, the manufacturers point out. The speed change is obtained by the micro-speed control which varies the effective driving diameter of the Varidiscs. These discs expand and contract for higher and lower speeds transmitting power through the Varibelt to the take-off shaft. This motor may be conveniently direct-connected to machinery.

* * *

Motorized Reducers Announced by Link-Belt

In order to meet the growing demand for still greater compactness and economy in self-contained enclosed speed reducing units, Link-Belt Company, Philadelphia, Chicago, San Francisco, announces that it is placing on the market a new line of motorized helical-gear reducers, an outstanding feature of which is the unusual accessibility of the motor and the high speed gears. A standard round-frame motor conforming with National Electrical Manufacturers' Association specifications, is secured firmly to side of reducer housing by means of an adapter casting which supports the motor shaft in over-size anti-friction bearings close to the pinion, to assure good alignment and proper mesh of pinion with its mate. The complete motor, wtih adapter and motor pinion, may be removed as a unit for inspection or maintenance, without disturbing the alignment of the motor, or of the gears remaining in the reducer housing; in fact, the motor pinion and gear are removable without disconnecting the driven machine or disturbing the low speed gears.

All gears are of the helical type, with teeth cut from heat-treated alloy steel. Anti-friction bearings are used throughout. The low speed shaft and its bearings are designed to carry overhung loads. A well-braced and ribbed gray iron housing provides a rigid mounting for the bearings, shafts and motor, as well as constituting a liberal-sized reservoir for automatic lubrication of the gears and bearings. Seals are provided at shaft openings to keep the oil in the housing, and the grit and dirt out.

The new motorized reducers may be mounted on floor, ceiling or wall; and are available in double reduction for ½ to 75 h.p., in ratios up to 38½ to 1, and in triple reduction up to 30 h.p., in ratios up to 292 to 1. They embody the usual advantages of not requiring a motor base plate or a high-speed shaft coupling, and as the motor forms an integral part of the reducer, the proper alignment of motor shaft is definitely assured at all times.

* * *

Metal Folding Chair Line Re-Designed

The Stewart Iron Works Company, Cincinnati, Ohio, with plant and main office at Covington, Ky., have announced that their line of metal folding chairs has been completely re-designed for greater strength and seating comfort. These chairs are adaptable to a multiplicity of uses around the mill village and elsewhere. The redesign of the Stewart line incorporated attention to durability, comfort, safety, quietness, and portability. The chairs are available in a baked enamel finish, in black, flat mahogany, flat walnut and dark green.

* * *

Booklet of Motor Maintenance Hints

The Ohio Carbon Co., 12508 Berea Road, Lakewood, Ohio, have prepared a new 64-page booklet, "The Brush Phase of Motor Maintenance," which deals in non-mathematical terms with causes and effects of sparking, excessive wear, etc., of brushes, commutators and slip-rings on direct and alternating current motors and generators, etc. It describes briefly, and illustrates with diagrams, the conditions of sparkless running and the effects of the applied load upon them; thus simplifying the detection of troubles before they become serious. Other sections deal with brush characteristics, selection and manufacture, and suggestions for the proper methods of maintenance of brushes, commutators and slip-rings.

* * *

Isolation Corkboard

Cork Insulation Co., Inc., 155 East 44th St., New York City, have issued a new bulletin describing Corinco isolation corkboard, a product designed for the control of noise and vibration.

Is the Clothroom an "ORPHAN" in YOUR PLANT?

SAVINGS THAT CAN BE EFFECTED

through the use of the Hermas Brush and Shear

Large Southern Mill: "Your automatic shear saved us $220 a week."

Leading New England Cotton Mill: "Saved us $11,439.96 a year."

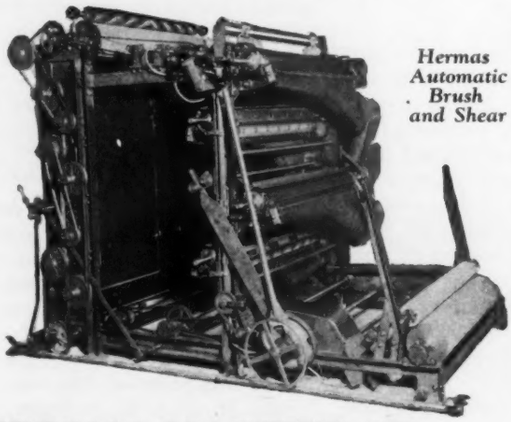
"Saved us the cost of half a bleach and $132 additional each week"—Large Cotton Manufacturer.

Mechanize With a HERMAS and SAVE!

IS THE clothroom the only department in your plant that is not mechanized? If so a study of your costs may prove illuminating.

In many "orphan" clothrooms — where all the work is done by hand — hundreds of dollars a week are being spent unnecessarily.

You, too, can end these losses as have hundreds of leading mills throughout the U. S. by the installation of the Hermas Automatic Brush and Shear. This machine removes all motes, leaf, trash, strings, and nibs. Gets all selvage threads. The only shear that will take both light and heavy fabrics. It will pay for itself in a few months. Write for descriptive folder and full details.



Hermas Automatic Brush and Shear

HERMAS MACHINE CO.

Warburton Ave., Susquehanna, R. R., Hawthorne, N. J.

Southern Representatives:
Carolina Specialty Co., Charlotte, N. C.

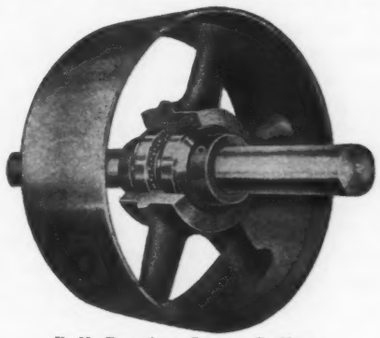
HERMAS

GOLDENS' TRANSMISSION EQUIPMENT

Blower and Fan Bearings

Equipped With

FAFNIR BALL BEARINGS



Ball Bearing Loose Pulley

Helps to Reduce Power Costs

The combination of Goldens' 53 years' experience and Fafnir ball bearing efficiency assure transmission equipment that can be depended upon for longer life and lower power costs.

Write for catalogue No. 11 and prices on Goldens' Drop Hangers; Post Hangers; Pillow Blocks; Loose Pulleys; Blower and Fan Boxes; Flange and Cartridge Units; Spinning and Twister Frame Boxes; or any special application.

GOLDENS' FOUNDRY & MACHINE CO.

Columbus, Georgia

Pulleys	Continuous Dyeing Machines
Rope Sheaves	Raw Stock Dyeing Machines
V-Belt Sheaves	Cloth Inspecting Machines
Size Kettles	Cotton Mill Castings

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Plans Shaping for Greenville Textile Show

Greenville, S. C., January 5, 1935.—With less than three months intervening before the opening day preparations for the eleventh Southern Textile Exposition (April 8 to 13) are complete except for the final details of the program. These will be announced soon.

The important events of the week will be the attendance of Dr. Edward T. Pickard and heads of the textile schools, a meeting of the Southern Textile Association, and one of the Greenville Section of the American Society of Mechanical Engineers. These will differ but little from the arrangements announced for October. The number of visitors to the show promises to be unusually large. As an indication of widespread interest several exhibitors have within the past month increased the sizes of their reservations. New exhibitors are coming in at an encouraging rate, according to a statement made this week by W. G. Sirrine, president of the exposition.

Mr. Sirrine said that he would not be surprised if all the remaining space on the first and second floors were disposed of within the next thirty days. There is no danger of late-comers being refused admission, however, since the balcony diagram is being prepared for any who cannot be accommodated on the two main floors. The steel Annex has long since been sold out.

* * *

Hurley-Johnson Representative In New England Named

E. W. Siedler has been appointed New England agent for Hurley-Johnson Corporation, 25 Walker St., New York City, importers and dealers in supplies for bleachers, dyers and textile printers. Mr. Siedler is making headquarters at the company's branch office, 15 Pine St., Providence, R. I.

* * *

Representatives Named for Safety Belt Lacer Company

Among the mill supply houses in the South which have recently started handling the Safety Belt hooks of the Safety Belt-Lacer Company, Toledo, Ohio, are: Odell Mill Supply Co., Greensboro, N. C.; Textile Mill Supply Co., Charlotte, N. C.; Greenville Textile Supply Co., Greenville, S. C.; Sullivan Hardware Co., Anderson, S. C.; E. C. Boykin Tool & Supply Co., Atlanta, Ga.; Batson-Cook Co., West Point, Ga.; Owen-Richards Co., Birmingham, Ala.; and Alabama Machinery & Supply Co., Montgomery, Ala. These hooks are supplied with steel binder bars to serve not only as a carrier of hooks, but as a strengthening part of the lacing.

* * *

Union Special Announces Sales Organization Changes

Increasing activity among manufacturers in the needle trades has resulted in the Union Special Machine Co. of Chicago making several recent changes in its sales organization in order to give customers greater service facilities and closer contact with representatives.

In the Philadelphia office territory which is under the direction of T. M. Murphey, an additional district representative, John Ebert, has been assigned and is now located in York, Pa. C. R. Spencer has been given the Pottsville district and is making his headquarters in that city. J. A. Zimmer continues as Union Special's representative at Allentown, Pa., and is covering the surrounding district.

In Boston, new and larger office space has been taken at 210 Lincoln Street where sales activities are under the direction of C. E. Stevens. The new quarters have permitted an expansion of the service department and the addition of a display room where latest types of Union Special machines have been set up for inspection.

* * *

Onyx Sales Meetitng

The Onyx Oil & Chemical Co., Jersey City, N. J., held another of its annual sales conventions during the last week of 1934. Sales representatives from the Midwest, New England, metropolitan, southern and Canadian territories, joined with the executives, chemists and plant men of the Onyx company, in a week devoted to talks and discussions of processing and finishing methods and new laboratory developments. The week's activities terminated in a gala banquet at the Hotel Plaza, Jersey City, with seventy members in attendance. At the dinner, James H. Tulley, vice president, officiated as toasfmaster. Addresses were given by Victor H. Berman, president, Charles D. Ehrengart, secretary, Richard Von Oesen, general manager, Dr. H. H. Mosher, director of research, and several others of the organization.

Allis-Chalmers Hold "Open House"

On January 19, the Allis Chalmers Mfg. Co., Milwaukee, Wis., held "open house", during which between 30,000 and 35,000 visitors and employees were conducted through the entire plant. This great organization, known to the textile industry by its products and services to this industry and others, is celebrating 88 years of progress. In keeping with the celebration, the "open house" presented an opportunity for the company's employees to bring their families and friends to the plant to view the results of their craftsmanship; and a large number of civic and industrial leaders, engineers and other friends were also present. Souvenirs for men and women visitors, and a luncheon, were among the features of the program.

Among the attractions seen during the visit were the huge hydraulic turbines for Boulder Dam, and hundreds of other products on display by the eight major departments of the company. From the smallest Texrope drive weighing a fraction of a pound to the huge steam turbine for Port Washington, Wisconsin, weigning 860 tons; from farm tillage tools to flour milling machinery, the company displayed its line which plays an important part in the industrial workings of almost every industry. Other attractions were: a periscope, similar to those used in the world war, used by Allis-Chalmers for examining the interior of forgings to discover defects in the metal; a boring mill, largest in America (large castings and parts up to 40 feet four inches in diameter and 16 feet in height, are bored and turned on this mill); cranes for handling extra heavy pieces; casting washing machine, a large concrete vault in which castings are placed on a revolving table, and water at a pressure of 450 pounds from the nozzle forces sand cores from the castings.

A booklet distributed to "open house" guests presented some staggering information as to the size of the company's West Allis Works: If all its buildings were placed end to end they would extend for a distance of three miles. The total floor area of the plant is 3,012,828 square feet; total ground area, 155.58 acres; plant boiler horsepower, 10,045; miles of railway track, 21; number of cranes, 174; heaviest casting produced, 120 tons.

Otto H. Falk is chairman of the board of Allis-Chalmers Mfg. Co., and Max W. Babb is president. They, with their co-workers, were recipients of many congratulations upon the record of the organization in attaining its present conspicuous position in American industry.

Obituary

GEORGE H. LEITNER, vice-president and general manager of the Graniteville Manufacturing Co., Graniteville, S. C., passed away on January 8, at an Augusta (Ga.) hospital, following an extended illness. Funeral services were conducted in Graniteville with interment at Lunwood Methodist Church, near Harlem, Ga. Mr. Leitner, one of the best known figures in southern textile manufacturing, was born 59 years ago near Leitner's Mill, near Augusta, Ga. He worked at the Augusta Factory as a youth, going later to Piedmont, S. C. He became superintendent of the Graniteville Mfg. Co. in 1917, and progressed to the position which he held at the time of his death. Surviving him are Mrs. Leitner and three sons, GEORGE H. LEITNER, JR., HENRY D. LEITNER, and FRANK W. LEITNER; and two daughters, MISSES LYDIA and NETTA LEITNER; one brother, HOWARD LEITNER, of Augusta; and one sister, MRS. KATE L. WIGGINS.

HENRY T. BOYNTON, overseer of the cloth room, and JAMES H. KIRKPATRICK, assistant superintendent and paymaster, of Martel Mills, Egan, Ga., were shot to death in the mill office on December 31 by J. A. DUDLEY, a former employee of the mill.

GROVER C. DILLING, superintendent of the Brazos Valley Cotton Mills, West, Texas, was killed in an automobile accident early in January. Mr. Dilling, a native of Gaston County, N. C., was a brother of MARSHALL DILLING, secretary and superintendent, A. M. Smyre Mfg. Co., Gastonia, N. C., and executive secretary of the Southern Textile Association.

W. MORGAN HOOD, sales representative of The Lunkenheimer Company, Cincinnati, Ohio, died in Roanoke, Va., January 9 as a result of an automobile accident. Mr. Hood was well-known throughout the southeastern states, having traveled that territory for The Lunkenheimer Company for more than 20 years. He was 67 years of age and resided in Washington, D. C.

ROY G. MERRY, president of the Centrif-Air Machine Co., Atlanta, Ga., passed away suddenly at his home in Atlanta on Wednesday, January 23, at 52 years of age, following a heart attack. Funeral services were conducted in Atlanta on January 24, with interment at Augusta. Mr. Merry, who was widely known in the textile industry, organized some 16 years ago, in association with JOHN B. BRENNEN, the Centrif-Air Machine Company, which manufactures cleaning and other process and specialty equipment for textile mills.

Buy Your Window Shades in Cans

at 1-2c Per Square Foot!

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine.* If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

Like an Umbrella Over Your Plant

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

Try NO-GLARE at our Risk

Write or Use Coupon

The SKYBRYTE Co.,
1929 E. 19th St., Cleveland, Ohio.

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company.....

Address .....

PERSONAL NOTES

about Men You Know

THOMAS H. MCKINNEY, formerly president of the Standard Coosa-Thatcher Company, has become connected with the American Yarn and Processing Company, Mount Holly, N. C., in an active executive capacity, effective February 20, according to announcement by C. E. Hutchison, president. Mr. McKinney, one of the best known figures in yarn manufacturing and sales circles, had been previously connected with the Dixie Mercerizing Company and the National Processing Company. In his new connection, with American Yarn and Processing Company, manufacturers and mercerizers of combed and carded yarns in all counts and plies, he returns to a field in which he is widely known and popular.

Mr. McKinney

P. W. ELLIS has resigned his position as superintendent of the Sibley Manufacturing Co., Augusta, Ga., to become northern sales manager of Joseph Sykes Bros. (American) Inc., 232 Summer St., Boston, Mass. This organization acts as distributors in the United States for the products of Joseph Sykes Bros., of England, well known card clothing manufacturers. Mr. Ellis was born and raised in Massachusetts and his family has been connected with the textile trade for many years.

JOE S. GAMMON has become assistant overseer of spinning at the Lanett Mill Division, West Point Manufacturing Co., Lanett, Ala. H. T. ROBERTS is general overseer. Mr. Gammon was for years overseer of spinning at the Exposition Cotton Mills, Atlanta, Ga., and was subsequently with the Clark Thread Co. of Georgia, Clarkdale, Ga., and the Selma Mfg. Co., Birmingham, Ala.

EVERETT BERRY is manager and superintendent of the newly organized Caldwell Hosiery Mills, Granite Falls, N. C. MISS LOUISE MCAFEE is secretary and treasurer.

J. W. FOX has been made managing director of the Gastonia Weaving Co., Gastonia, N. C., succeeding the late HARRY A. MUSARD. Mr. Fox has been superintendent for the past 18 months.

J. M. BUTLER has been made secretary-treasurer of the St. Pauls Cotton Mills, St. Pauls, N. C., succeeding A. R. MCEACHERN, resigned. A. I. MACDONALD is now general manager, succeeding J. B. MEACHAM of Charlotte, resigned.

PETER RICHMOND has become manager of the Crompton-Shenandoah Company plant at Waynesboro, Va., succeeding L. W. MASON, who has been transferred to the company's plant at Hartwell, Ga., the Hartwell Mills.

W. R. PARKER, for 17 years connected with the Bibb Manufacturing Co., and for the last 14 years superintendent of the No. 2 plant in Macon, Ga., recently resigned to become, effective January 21, superintendent of the Strickland Cotton Mills, Valdosta, Ga.

MURRAY R. GARDNER has been transferred from the Payne Mill of Bibb Manufacturing Co., Macon, to the superintendency at the Number 2 Mill, succeeding W. R. PARKER, and P. E. FINDLAY, JR., has been promoted from overseer to superintendent at the Payne Mill succeeding Mr. Gardner. J. P. PARKER succeeds Mr. Findlay as overseer, and CAL ADAMS, formerly section man, succeeds Mr. Parker as shift foreman.

JOHN BARKER, formerly night overseer of weaving, Goodyear Fabric Corp., Devon Mills, New Bedford, Mass., has accepted the position of overseer of weaving at the Goodyear Decatur Mills, Decatur, Ala., succeeding W. C. FRAZIER, resigned.

H. RAIFORD GAFFNEY has become associated with the Steel Heddle Mfg. Co., of Philadelphia and Greenville, S. C., in charge of the company's new office at Atlanta, Ga., where Mr. Gaffney is making his headquarters. Mr. Gaffney, a graduate of the textile department at Georgia Tech, has recently been assistant general superintendent of the Sibley Mfg. Co. and Enterprise Mfg. Co., Augusta, Ga., and previously held other responsible positions in southern and eastern mills, with an extensive experience on plain and fancy fabrics. He will cover the territory of Georgia, Alabama, and Mississippi for Steel Heddle.

JOHN A. MCFALLS has resigned as general superintendent of the Morgan Mills, with plants at Laurinburg and Laurel Hill, N. C., EDWIN MORGAN, president, has assumed the duties of general superintendent, Mr. McFalls has now become superintendent of Entwistle Mfg. Co., No. 2, Rockingham, N. C.

EDWARD F. ADDIS has resigned as president of Meinhard, Greef & Co., New York City, to become treasurer and chairman of the executive committee of Burlington Mills, Inc., Burlington, N. C., with headquarters in Greensboro, N. C.

J. B. RHINEHARDT has become connected with the spinning department of Winnsboro Mills, U. S. Rubber Products Co., Inc., Winnsboro, S. C. He has been connected with Appleton Mills, Anderson, S. C., and, previously, with the Loray Mills, Gastonia, N. C. He is a graduate of the textile department of Clemson College, Class of 1932.

DONALD COMER, president of the Avondale Mills, Birmingham, Ala., has been named also president of Pomona Mills, Greensboro, N. C., which were recently acquired at receiver's sale by the Hunter Manufacturing & Commission Co.

J. A. EASLEY has been made general superintendent of Rock Hill Printing and Finishing Co., Rock Hill, S. C., succeeding Halstead Heap, resigned. W. A. GRIER has succeeded Mr. Easley as assistant superintendent.

O. G. MOOREHEAD, formerly general superintendent of the Loray plant, Manville-Jenckes Corp., Gastonia, N. C., has become superintendent of the Santee Mills, Orangeburg and Bamberg, S. C., succeeding W. A. HUNT, resigned. JOHN H. COPE has resigned as president of the Santee Mills, being succeeded by C. S. HENEREY, as vice-president and general manager.

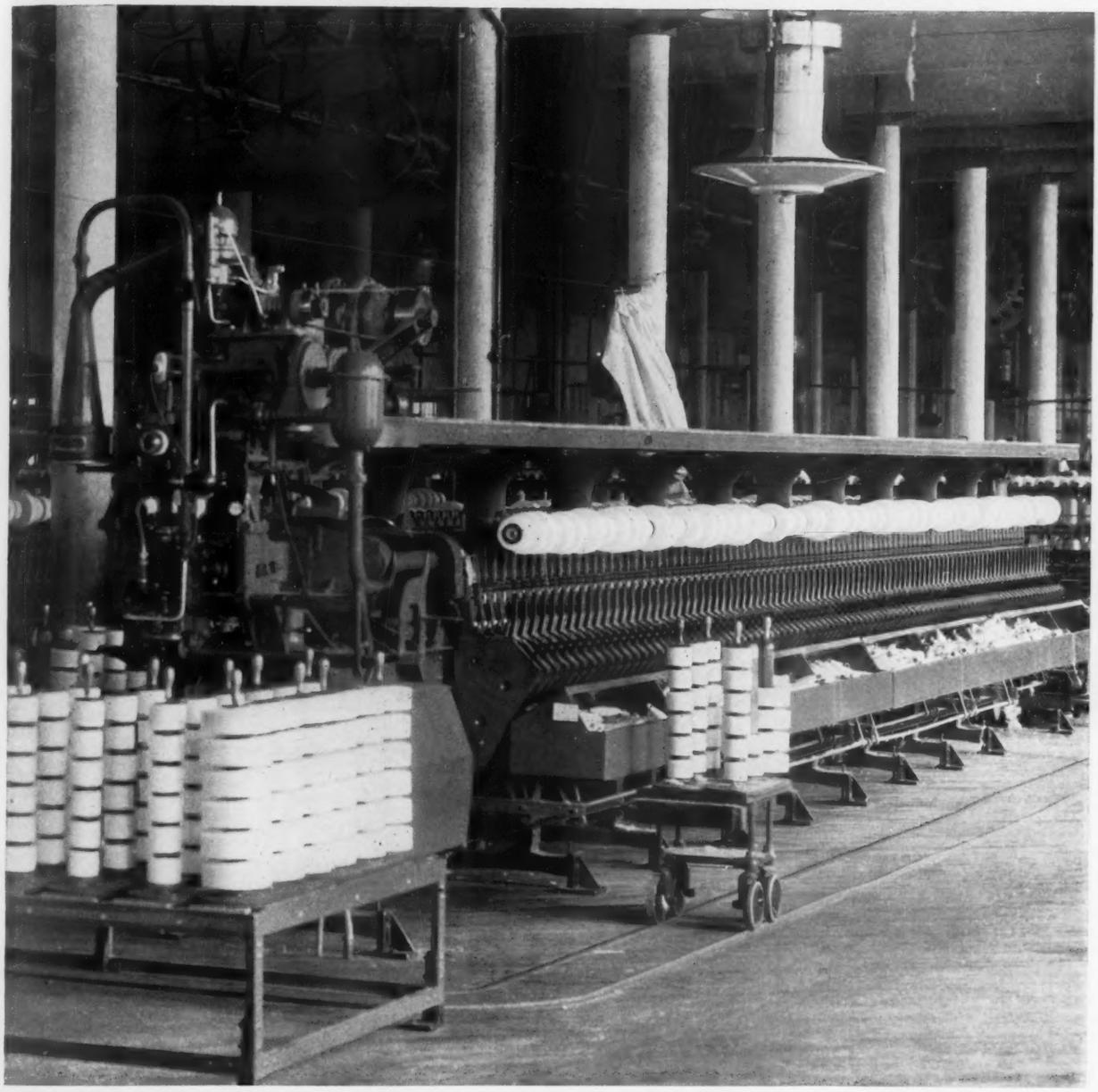
T. B. HUNT, formerly with the Santee Mills, Orangeburg, S. C., has accepted a position with the Piedmont Mills, Egan, Ga., as overseer of spinning and twisting.

W. A. HUNT, formerly superintendent of the Santee Mills, Bamberg and Orangeburg, S. C., has become overseer of carding at the Meritas Mills, Columbus, Ga.

D. G. FLOYD has resigned as superintendent of the Cowpens Mills, Cowpens, S. C., and has been succeeded by W. G. DAY.

(Obituary Notices on Page 103)

REDUCING SPOOLING AND WARPING COSTS . . .

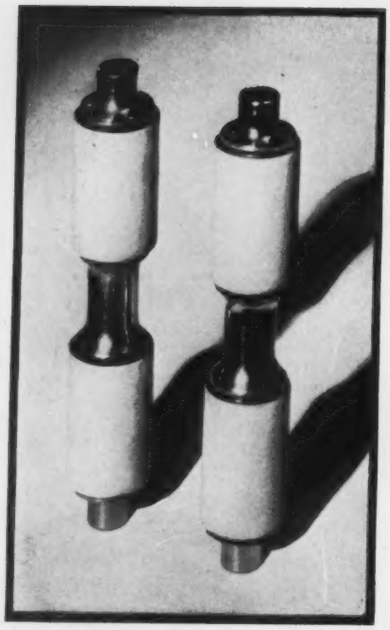


BARBER-COLMAN AUTOMATIC SPOOLERS

AND SUPER-SPEED WARPERS

285,000 SPOOLER SPINDLES AND 2,800 WARPERS HAVE BEEN REPLACED BY THE BARBER-COLMAN SYSTEM

THE NEW "G3"



GOODYEAR

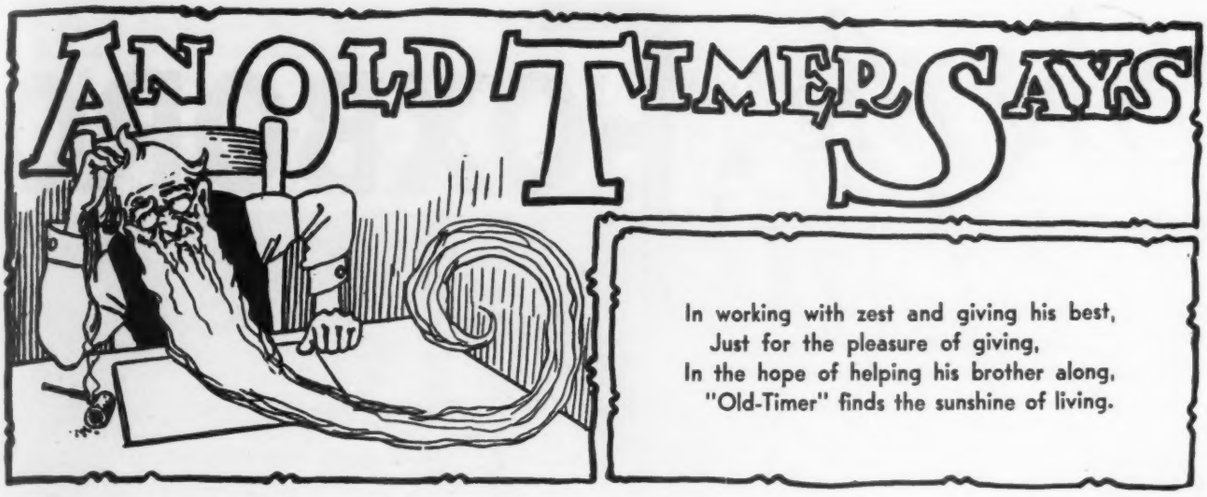
Now offers the motoring public the sensational new G3 all weather—the tire with the flatter, thicker tread. Wider riding ribs—more non-skid blocks and an average of two pounds more rubber in the tread. All this adds up to 43% more non-skid mileage at no extra cost.

The heavier tread in the new G3 all weather tire is only possible because of Goodyear's Patented **SUPERTWIST** Cord body—the unusual strength and quality of which begin in strong, perfectly-spun yarn . . . . All three Goodyear Mills use **SPINNA CALF.**

A. C. LAWRENCE LEATHER CO.

Specialists in Textile Leathers

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

How About YOUR Opportunity, Mr. Overseer?

You were selected out of many other men to be an overseer because you were not only more efficient in your work, but because the judgment of some superintendent sized you up as good material out of which to make an overseer.

You showed you had better judgment than your co-workers—you probably had some more education than the others—and he (the superintendent) thought you had more brains; that is, more cotton mill brains, if you follow me.

Well, now that you have been overseer for some years, what have you done to prove that your superintendent had the right dope?

Can you get your section men to run a section like you did?

If not, you have fallen down there. You have not done what you are being paid to do—you have not done what your superintendent hoped you would do.

Don't get me wrong. I do not mean that you should be able to have every section man handle every detail just as you would do it, but I do mean that your teaching—your instruction—your rules—your influence—your management—should be passed along to your subordinates so that it will overcome their natural tendency to run their jobs in their way, and will cause them to run them your way because you ran your section better than the other men did.

You managed your help better than the other men did—you were more loyal to your overseer than the others—he had more confidence in you—you were more loyal to the firm than the others—you were able to see that Capital and Labor must go along together—that neither Capital nor Labor can permanently prosper unless the just rights of both are conserved.

Now, how about it? Can you teach, influence, manage or by any means imbue those qualities into the people who are working for you? If not, I still claim you have fallen short of that superintendent's estimate that promoted you, and there is no doubt in the world that you are not doing what you are being paid for.

Oh yes, I know what you are thinking: How many overseers can measure up to what I have mentioned, and I am just as quick to admit—"Darn Few". And the thought I am trying to convey to that brain of yours is that the difference between that "Darn Few" and the "Large Majority" is:

Those who are in the class of "Darn Few" won't be overseers long—they will be superintendents—and those who are in the class of the "Large Majority", well, they are just overseers—that's all.

The great pity of the whole situation is that there are so many men in that "Large Majority" class who could so easily break away from the crowd and join that "Darn Few" who are going on up the ladder. And here is a rather harsh statement—a statement which some of my readers are going to resent, but it is a fact just the same:

Most every overseer who reads this will be fired with the ambition to start right in the next day with the determination that he is going to prepare himself to be one of those "Darn Few", but—and here is that harsh statement:

His enthusiasm will not last a month—

He hasn't got the backbone to stick to it—

He is not man enough to do what his own judgment tells him is best for his future.

The plain unadulterated fact is:

He is too lazy.

It is too easy to drift along with the crowd. It is the line of least resistance that all human beings find, and so few of them are able to overcome.

After a man has finished school—is married and has been fortunate to become an overseer, well, it takes a He Man to continue his studies—to do the things his own judgment tells him he really should do. He is prone to drift along—possibly running his job just enough to hold it because the boss doesn't know of another man who would do much better (there are so few to be found). That is the very condition I am trying to explain, that there are many overseers who have the brains—men who are loyal—men who have the personality—men who could so

See the New FOXBORO

Recording Thermometer

Modern Design Gives You Advantages That Save Time—Temper—Trouble. One glance will show the many unique improvements which make Foxboro Recording Thermometers the easiest to use and the greatest dividend earners you can employ.

Sixteen Improvements on Proved Design give you the utmost in accuracy, long life and low maintenance cost. These improvements are the result of years of research and over a quarter of a century of experience. You can have absolute confidence in Foxboro Recording Thermometers.

Of Vital Importance to You is the fact that Foxboro is not committed to one type of Thermometer element. You have four distinct types* from which you may pick the one best suited to your needs.

In Addition to the Right Type of actuating element, you will have the correct sensitive bulb and tubing made of the material required by your process conditions. Our engineers will see that you get the Thermometer that will give you the best service. Ask to see a sample Recorder.

**A Type for Every Need*

Vapor Tension — **Liquid Filled**
Gas Filled — **Fully Compensated**

Write for Bulletin No. 169—no obligation.

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

THE FOXBORO COMPANY
FOXBORO, MASS. U. S. A.
Branch Offices in Principal Cities.

. . COMPLETE INDUSTRIAL INSTRUMENTATION . .

easily go on to good positions—if they only had the grit to back up their ambition.

Oh yes, most all of them have the ambition, that is they have the desire—they want promotion—they build air castles in their minds as to the things they would do if they had that five-thousand or ten-thousand dollar job, but they are just drifting along waiting for someone to drop that nice job over in their laps without any effort on their own part. And sometimes that does happen, but, brother, the average is so small that the great majority who are waiting for it are simply out of luck.

The very fact that cases like this do happen—that is, that you see or hear of a man being promoted when you know he is not qualified for the job—does that not show you what I have been contending for years; that there are so few men who stand out from the others, that there are so many jobs for which the boss is wishing all of the time he could find a qualified man? Don't you see how easy it would be for you to find promotion if you would only prepare yourself? Well, maybe you can't "see"—probably you are so blind to your own qualifications that you feel you are qualified for that better job, but hard luck or something is standing in your way.

Suppose we make a little illustration:

Two boys whom we will call Tom and Jack apply to you for work and they both make their applications in the same way—that is, they both have practically the same conversation with you.

Tom: I hain't never worked in no cotton mill—but I hain't makin' nothing on no farm anymore and I is gwine to quit farmin'.

Jack says: I have never had any cotton mill experience but there is no money to be made at farming and I have decided to make application to you.

Now, let me ask you, Mr. Overseer, three questions:

Question No. 1: What is your impression of the two men and which one are you likely to hire?

Question No. 2: Do you believe that Tom would know why you hired Jack if you did not tell him?

Question No. 3: Do you realize that you may be making the same impression on the big men with whom you talk that Tom made on you?

Not because you use the words "hain't", "gwine", etc., as Tom used them. No, you have more education than that if you have never been to school, because if you are an overseer you have acquired it by observation—but I still ask the question: Do you realize you may be making the same impression on your superiors that Tom made on you?

Now go back to *Question No. 2* and read it again.

No! Certainly Tom would not know unless you told him!

And you probably never gave this reasoning any thought concerning why that other fellow got the job instead of you.

Well, then, I am telling *you*. I have been trying in every way I know how to tell you for the last 13 years through this OLD-TIMER page. I have gone at it from every angle I could possibly conceive. I have used every illustration that I could think of from actual experiences I have had. I have explained through my editor and otherwise that I am not a professional writer (read the little piece of poetry at the top of the OLD-TIMER page). I can only weave a little reading matter around actual experiences. You are not reading fiction—every particle of advice I have ever tried to pass on to you has had the background of more hard knocks than you had any idea of.

For example, if I did not personally know that executives were ever on the lookout for just the first intimation of possibilities for promotion in men—

If I did not know personally that many five-thousand-dollar jobs would pay ten thousand dollars if they could only find the right man—

If I did not know personally that OPPORTUNITY is standing with outstretched arms, begging you to come—

Well, I just wouldn't have the heart to appeal to you the way I do.

N. C. Textile School Begins Winter Session

The Textile School of North Carolina State College opened its winter session on January 2 with the largest registration in its history, the record breaking enrollment of last fall having been increased by the return of old students and the arrival of new students from other schools and colleges.

Dr. Thomas Nelson, dean of the Textile School, who made a survey of European textile schools during the past summer, stated that the increased enrollment has made it possible for the textile school to alter its curricula and rearrange its program so that it can develop more and better trained men who will add to the enviable reputation for accomplishment which alumni of the state college textile school have established in many phases of the textile industry.

* * *

DuPont Places Large Order For Air Conditioning

In connection with their Spruance Plant No. 2, which when completed will represent the last word in modern rayon manufacture, the DuPont Rayon Company, Richmond, Va., has placed an order with The Cooling and Air Conditioning Corp., Division of B. F. Sturtevant Company, Hyde Park, Mass., for furnishing and installing a complete air conditioning system.

The spinning room of the Spruance No. 2 plant is probably the largest single room of its type in the country. The air conditioning system handles 500,000 cubic feet of air per minute. Other air conditioning systems are also being installed at this plant by The Cooling and Air Conditioning Corporation, which include cone winding and carrier storage rooms comprising the textile areas.

* * *

SYDNEY P. COOPER, president of the Harriet Cotton Mills and Henderson Cotton Mills, Henderson, N. C., has been made chairman of the Cotton Textile Code Authority's subcommittee on carded yarn. SYDNEY P. MONROE, assistant to the president of the Cotton Textile Institute, is now secretary of the subcommittee. HYMAN L. BATTLE, of the Rocky Mount (N. C.) Mills, and J. BRUCE MCCULLOUGH of the Franklin Process Company, Providence, R. I., have been added as members of the subcommittee.

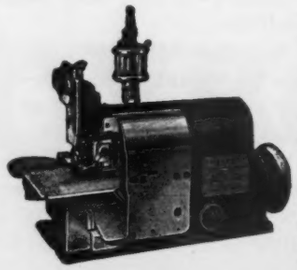
40,000 More Looms *are counting on* WAK counters

Over one hundred mills have selected and installed over 40,000 WAK pick counters, during the last eighteen months. A point-by-point demonstration of WAK superiority convinced these mills—as it will convince you—that WAK counters will deliver maximum loom production and maximum returns on investment.

A wire or letter will bring you this demonstration of WAK superiority. We will be glad to figure with you, either on replacements or new installations.

"You can count on WAK counters"

WAK*
Incorporated
Charlotte, N. C.
W. A. Kennedy, Pres.
*Reg. U. S. Pat. Off.



TRADE MARK
MERROW
REG. U. S. PAT. OFF.

HIGH SPEED TRIMMING AND OVERSEAMING OVEREDGING AND SHELL STITCH MACHINES

FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

THE MERROW MACHINE COMPANY
16 LAUREL STREET HARTFORD, CONN., U. S. A.
Southern Representatives:
E. W. Hollister, P. O. Box 563, Charlotte, N. C.
R. B. Moreland, P. O. Box 895, Atlanta, Ga.

SEYDEL-WOOLLEY CO.

SIZING FINISHING

SEYCO WARP SIZING SPECIALISTS SEYCO

SCIENTIFICALLY PREPARED TEXTILE CHEMICALS

A CONCERN IS KNOWN BY THE CUSTOMERS IT KEEPS—

FINISHING SIZING

ATLANTA, GA.

CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by
CLINTON COMPANY
CLINTON, IOWA

NRA WE DO OUR PART

QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

Preventing Broken Filling on Bobbin Change on Loom

RECENTLY, in conjunction with his articles on loom fixing, Ivar Moberg was requested to discuss the following problem. The problem was:

"Now, the problem that I wanted help from Mr. Moberg on is, a Draper loom breaking the filling when it changes bobbins. I think I know some few things that cause this trouble. However, when the battery is threaded correctly, the transfer fork is in position and has no sharp edge, the loom seemingly does not *roll* the bobbin in, the shuttle does not go too far under the battery (that is, the picker is not bored out so deep as to cause the shuttle to be pulled back), the sword is tight on the rocker shaft, the battery is at the proper height or level (that is, the distance from the bottom of the box plate to the under side of the battery), and the Pitman arm is tight—then that is about as far as I can go in looking for this trouble. I would be glad to see Mr. Moberg's comments on this problem."

The question was submitted to Mr. Moberg, who kindly replied in detail, and as of interest to other readers on this point, his answer is reproduced below:

"In reply to your inquiry would say that it is almost impossible for me to state just what is causing the filling breaks on the bobbin change without seeing the loom in operation. However, I am glad to state some of the causes of this trouble and the remedies:

"1. See that the shuttle eye threads the filling easily and surely. A good threading shuttle eye should be threaded after a filling pull of five to six inches and lock it so that it cannot be unthreaded again. It is very important to have a shuttle that will thread easily and surely.

"2. See that the angle of the filling from the small end battery disc to the thread placer is such that it will lie slightly back of the shuttle eye when the shuttle is picked from the box. I presume that the inquirer is using regular filling wind bobbins.

"3. See that the filling is not struck by the picker or picker stick on the bobbin change.

"4. See that the tip of the bobbin is not snapped downward on the bobbin change. The transferring fork must be set high enough from the tip of the bobbin to permit the bobbin to be transferred with its tip pointing slightly upward. Better than the transferring fork is the short bobbin guide that strikes the filling on the bobbin further up from the tip. Then the filling is free to unwind somewhat from the bobbin tip when the transferring takes place.

THIS regular discussion department is abbreviated this month to provide space for the special general articles dealing with the theme of Modernization and Maintenance. Next month the broad, extensive discussions will be resumed in this department . . . . . .

◆ ◆

"5. When there is trouble with filling breaking on the bobbin change, it is sometimes advisable to place a thin metal disc of a larger diameter close to and outside the regular small end bobbin disc. This will give additional length to the filling between the tip of the bobbin and the thread holder, which might be needed as the bobbin is transferred.

"6. See to it that the tip of the bobbin is not injured or rough. On old bobbins which have repeatedly been subjected to filling conditioning the top becomes very soft and a burr is easily raised on the tip as the bobbin is forced out of the battery, especially if the springs in the small end disc are pressing excessively on the bobbin tip. By moving the small end disc a little further out we can reduce the pressure of the springs.

"7. See that the transferrer does not go too far down into the shuttle. There should be a play of about 1/16-inch between the transferrer and the rings on the bobbin when the transferring is completed.

"8. If the loom is in such a good mechanical condition as the inquirer claims, it is my opinion that the shuttle has a poor threading eye or the bristles are not placed properly. The bristles should rest on the bare bobbin tip at an angle of approximately 70 degrees. They should be cut so they do not extend more than 1/16-inch beyond the center of the bobbin. If the filling is fine, it is important that we select bristles which are soft, springy and properly tapered. They must press on the bobbin tip so as to give proper tension on the filling on the first pick after the bobbin change and thus facilitate the threading of the filling in the shuttle eye. The reason for having the bristles at a sharp angle to the bobbin is that as the bobbin is transferred it presses the top bristles down under it, making these bristles lie under the bobbin which is against the filling. The filling as it unwinds from the bobbin must bring these bristles to the top of the bobbin, or break. To facilitate this the bristles must have a sharp angle to the bobbin, be short and not too stiff. This refers in particular to the top bristles.

"I trust that I have been of some help to the inquirer and I shall be glad to assist him further if he will give me more information about his trouble."

Preparing and Testing the Size Mix

A practical device for testing the specific gravity of a size mixture is given here, as well as detailed information on the cooking . . . . . .

EDITOR COTTON:

On page 79 of the September issue I notice that "CONTRIBUTOR NO. 6332" asked two questions relative to mixing size and testing the specific gravity of the finished solution. First, "Which is better in preparing a kettle of size; to start with a full kettle of water, adding all ingredients and then cooking, or to dissolve all the ingredients in a fractional amount of the total water necessary, then diluting with additional water to bring the mix up to the required gallonage after cooking?", and second, "Has it been found practicable to test the specific gravity in the solution in the size box for maintaining as near as possible a uniform density of the liquid? If so, what type hydromoter is best suited for this purpose?"

I should like to offer the following comments on these questions, taking them up in order. In our plant, we have found it more profitable to dissolve the size ingredients in the required amount of water at the beginning. Should a considerably less percentage of water be used in attempting to get the starch mixed, there will be trouble in stirring it. Such a thick, gummy substance will be produced that the paddles and motor driving them will have undue strain on them. By the time the rest of the contents of the size mixture are added it will be almost a paste.

We believe, too, and firmly, that when more water is added later, the same mix is not secured—even though the additional liquid is at the same temperature. Although our kettles are equipped with both revolving paddles and "bafflers", which should give a thorough stirring even under adverse conditions, we still believe that the same solution will not be produced by adding water after cooking that is secured by beginning with the required gallonage.

Occasionally you do find a man who will run water into his prepared size, but he often wonders why he has trouble out in the weave shed. Then too, there is the danger of making a slip somewhere in the temperature of water, and if it is only a little cooler it will coagulate the granules of starch, giving what we call "hard size". This is the bane of the weaver's existence, mainly because it is uncalled for.

Now, one of the principal reasons we fill our kettles nearer the top to begin with is that less space is left in them by doing so. The more space there is, the more condensation there will be as the size cooks, and the more water will come into the solution—and, to keep the alliteration, the "more thinner" it gets.

Sometimes we find that the finished solution isn't exactly the size that we want to use. For a long time we attempted to correct it by "doctoring", but experience has taught us that if we don't get what we're after the first time, "to ditch it and try again". It will save both time and money. We even throw it away if it gets too thin.

In one successfully used formula are the following ingredients: 144 gallons of water, 9½ pounds of compound, 5½ pounds of tallow, and 200 pounds of starch —cooked at 208 degrees for 1 hour and 45 minutes.

Some men claim that to cook size in smaller batches will give fresh size at all times. This is true, but we don't exactly follow their line of thought in this case. No matter whether you are cooking a large run or a small one, you've got to cook them both the same length of time, so why not just prepare enough at first? Then too, taking for granted you will make two small batches, if you cook the first for 1 hour and 45 minutes, you've still got to cook the second 1 hour and 45 minutes, too. And, if for any reason you mix them, the same solution won't be produced. Also, after the size goes to the storage kettle, the first run will be cooking twice as long as the second.

I believe that it is just as easy to use the required gallonage of water from the beginning; it takes less time, involves less risk of spoiling the solution, and is a more accurate method of mixing the size.

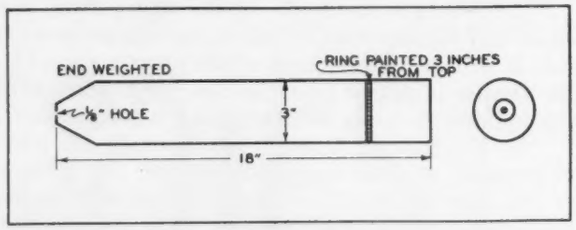
Testing the Specific Gravity

Now, to get on with the second question, relative to testing the specific gravity of the mix after it has cooked. I should think it certainly is important to know whether the solution is of the same strength, viscosity, or specific gravity—whichever we care to call it. In our plant we have automatic recording instruments that give us the required results every time, but we always make a test ourselves by the "feel" of the warp as it comes off the cylinder. I suppose this is the method used in most mills.

We believe that just about as much size can be put on the warp when the solution is light as when it is heavy. The light solution is more likely to penetrate the fibers, whereas the heavy solution will only cling to the outer walls. A large percentage of this will be shedded off between the whip roll and the fell of the cloth.

When it comes to the type of hydrometer best suited for testing the strength of the size solution, we get on dangerous ground. There are hydrometers made for both heavy and light liquids but we have never been able to get satisfaction from them nor do we know of anyone that has used them in the cooked mix for practical purposes.

We have designed a simple home-made hydrometer for testing the thickness or viscosity of the size after



Home-made hydrometer for testing size mix . . .

it has cooked. I have never heard of its being used in a cotton mill before, so if it will be of any help to the readers of this department I shall be glad to pass it along.

We took a piece of sheet tin 18 inches long, and welded it into a cylinder 3 inches in diameter. One end was left open and the other tapered down to ¾-

inch. In this end we bored a hole ⅛-inch in diameter. This gave us a trick that looked very much like a projectile used in the artillery's French Seventy-Five. Three inches from the top we painted a ring to be used as a marker. We then punched two small holes in the top (open end of the cylinder) and put a wire in it to suspend it by. The lower end is weighted.

The procedure from then on is based on the simple fact that a light liquid flows faster than a heavy one. We lower the cylinder into the size to be tested and time it for the period it takes to sink down to the painted line we use as the marker. The heavier the solution, the slower it sinks; the lighter the solution, the faster it sinks.

Now to make the test practical, you must first have a kettle of size that you consider the average you wish to make as your standard. Make your test with the cylinder hydrometer in this and record it. From then on as you test subsequent mixes you know whether their deviation is too much to be used in slashing.

It might also be useful to make up a kettle of size that is the worst you can possibly use. Time the cylinder hydrometer in this mix and if in the future the test approaches this result, you will know what solution you are dealing with.

If you do make one of these cylinders to be used as a hydrometer or a viscosimeter, remember that the heavier the material used the faster the cylinder will sink. To correct for this a small hole should be bored in the cone end.

CONTRIBUTOR NO. 6357.

Clogged Bolsters On Fly Frames

EDITOR COTTON:

Here is another problem that I would like to thrash out to the satisfaction of all readers of "HOW OTHER MEN MANAGE". I do not wish to appear to be cocksure on any subject, but I will admit that I am somewhat inclined to rely upon my own judgment until I am fully convinced. I am going to quote below the writing of one of the best known cotton mill men of his time:

"In some card rooms we find the bolsters on the fly frames so clogged up with dirt that on the building of the first layer when the carriage reaches its lowest level, the frame will almost stop owing to the resistance offered to the rotary axial motion of the spindle, caused by the diameter of the spindle being larger at the bottom."

Now, if I am not mistaken, I have seen this quotation verified in the "HOW OTHER MEN MANAGE" department by men whom I believe to be competent writers. That is why I am bringing up the subject again. First, to be fair, I am going to admit that there would be some resistance offered to the rotary axial motion of the spindle if the bolsters were very badly clogged up with dirt, but not enough resistance would be offered to cause the frame to almost stop on the tight pulley at the beginning of a new doff, when the carriage was at its lowest level. If this was the case the spindles would become tight enough to be lifted up by the carriage on its upward

Whenever you buy 3-in-One Oil you actually buy *three* oils—expertly blended to act three ways for maximum protection of equipment.

Three-in-One is light, penetrating—with a knack for "staying-put" where lubrication is needed. And while it lubricates it keeps moving parts *cleaner* and *prevents rust.*

Delicate equipment particularly should have this triple protection to prolong service and postpone repairs. To get this protection, get 3-in-One Oil. No single-element oil can duplicate the protection it gives. Ask your wholesaler or write direct for gallon-can prices.

3-in-One Oil may also be purchased in handy spout cans containing one and three ounces, or in bottles.

THREE IN ONE OIL COMPANY
170 Varick Street - New York, N. Y.

MASSACHUSETTS FIRM REPORTS SAVING OF 225 TONS OF COAL A YEAR

It's not hard to learn in *advance* what you can expect from a Morehead System. For instance Everlastik, Inc., of Chelsea, Mass., writes:

"After installing the complete system both on our finishing machines and on the heating returns, we saved 225 tons of coal a year on a boiler developing only 50 horsepower. We eliminated the individual cut-off traps, with the result that we no longer have leaky traps to contend with, and the machines are always hot. We estimate production on the finishing machines has been increased from 10% to 15%."

And hundreds of other steam users report similar experiences with the Morehead System. In our files are records of money saved . . . costs reduced . . . production stepped up . . . quality improved. No matter what you use steam for—heating, power or process work—the Morehead automatically returns *hot* condensate to your boiler, under pressure, as feed water. It scientifically drains all pipe lines and equipment. Insures dry radiation at all times.

Remember, a Morehead System costs comparatively little, requires no attention and is easy to install in connection with your present steam plant. So why not make up your mind to get full information. The coupon below will bring it to you by return mail.

MOREHEAD MANUFACTURING COMPANY
DEPARTMENT C DETROIT, MICHIGAN

MOREHEAD MANUFACTURING COMPANY
Department C Detroit, Michigan

I'd like to know the experiences of Morehead users and to find out what Morehead methods will save me.

*Name*_____

*Company*_____ *Address*_____

*City*_____ *State*_____ (580)

So . .

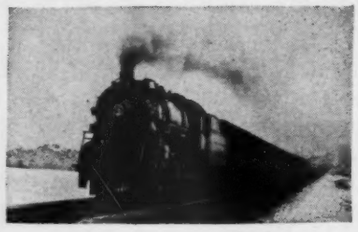
Your best bet for 24 hour protection against intrusion is FENCE . . . and the name Stewart has been synonymous with fine Fence Making for 49 years.

A sturdy Stewart Non-Climbable Chain Link Wire Fence will pay its own way two-fold in the saving it effects. Decide to look into this Fencing idea now—write

The STEWART IRON WORKS CO., Inc.
106 Stewart Block
CINCINNATI, OHIO

Stewart IRON AND WIRE FENCES

When WINTER Says "STOP!"



Get *your* shipments through

VIA RAILWAY EXPRESS

When snows and blizzards clog the roads of the nation—THAT is when the unfailing dependability of Railway Express shows up to its greatest advantage.

Fast passenger trains, on which all Railway Express shipments travel, are first to break through the snow and ice barrier.

Defy winter's delays. Get YOUR shipments through so that they will arrive when wanted by your customers, by means of the always dependable Railway Express service. We give a receipt to the shipper. We take a receipt from the consignee. Pick-up and delivery service in most cities and towns. Phone nearest Railway Express agent for service and information on rates.

The best there is in transportation

RAILWAY EXPRESS AGENCY, Inc.

SERVING THE NATION FOR 95 YEARS • NATION-WIDE SERVICE

movement at the beginning of each doff, because it takes only a small piece of foreign matter accumulated in the bolster to cause the spindle to be pulled out of gear by the carriage on its upward movement.

I remember some trouble I experienced years ago along this line. It was as the same defect mentioned above. On one of the fly frames, at the beginning of a new doff, the frame would almost stop when the carriage reached its lowest level. I had read the quotation which I have given and I decided the remedy would be to clean the bolsters, which I did, but after starting the frame in operation again I found it did not help the trouble any at all so far as I could see. Then it appeared to me if the spindles were all that tight in the bolsters, why didn't at least one of them stick and be raised out of gear by the upward movement of the carriage? It was then I realized the trouble, just as you would guess: the spindle bolsters were out of line with the spindle steps. After lining them up the trouble ceased.

T. R. (N. C.)

Comments on Young Man's Card Romo

Some constructive suggestions regarding the fly frame practices described in August issue . .

EDITOR COTTON:

"CONTRIBUTOR NO. 6123" certainly did start something by his contribution on page 73 of the August issue, in which he asked what is wrong with the card room of the friend he visited—that is, the fly frame department. He started me to doing a little thinking and though I sincerely believe all that he described about the young overseer's card room, I am still wondering how the fellow happened to be lucky enough to get by in these days which demand everything contrary to the condition of things as described by "CONTRIBUTOR NO. 6123".

However, it surely proves, as OLD-TIMER says, "There is always room at the top". There must be, if there are many more card rooms being run in this fashion.

Your contributor stated that he found some "new things" which were a revelation to him. New things —I guess so, and some defective ones too. One cannot help but smile at the overseer's expression of delight because of his "success" in having the ends on the fly frames running tight and not "waving" or "bouncing" like most fellows have them.

That is lack of knowledge and experience of course, but now I am wondering how the spinning overseer felt about all of this "success" in the carding department. Well, I suppose, that is in a different chapter.

However, "CONTRIBUTOR NO. 6123" asks what was wrong. Well, if this man had the correct tension gears on all frames he would not have had the "fiddle string" appearance on the ends. But perhaps his gears were okeh and the human element was allowed plenty of scope. By that I mean that his tenders had been allowed to manipulate the tension to suit themselves by a slight twist of the wrist on the rack, or maybe he was putting in too much twist or had incorrect lay gearing. We surely know that he was unaware that

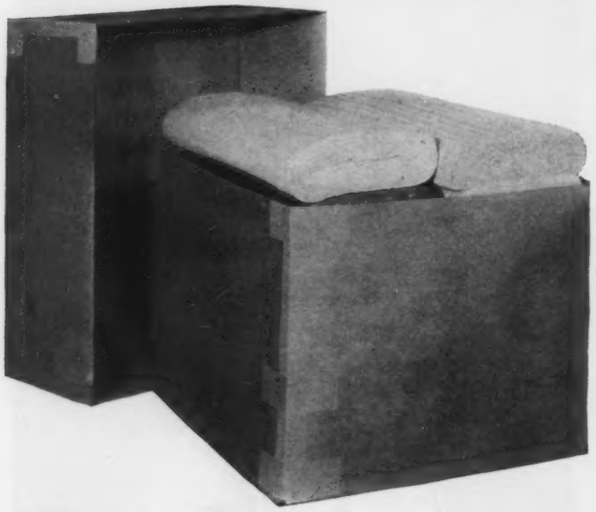
a Parrot
knows not of
the MEANING
of the Words it speaks
"Polly wants the order"
"Just as good"
"Me too"
Steel Heddle Mfg. Co.
STEELCO HEDDLES REEDS FRAMES AND HARNESS ACCESSORIES
2100 W. Allegheny Avenue PHILADELPHIA, PA.
Southern Plant: Greenville, S. C. New England Office: Providence, R. I.
Foreign Offices: Huddersfield, England, Shanghai, China
The Originators.

EXTRA

VALUE

CAPACITY

★ ECONOMY



EXTRA VALUE . . . in the tough, durable corrugated board that goes into every H & D textile box. Extra capacity . . . in the telescoping lid that permits the box to be packed to the top or from five to fifteen inches above the top. Extra economy . . . in the convenience an elastic type of box affords. A sample and quotation will be promptly sent upon request. The Hinde & Dauch Paper Co., 454 Decatur Street, Sandusky, Ohio.

HINDE & DAUCH

★ *Corrugated Textile Boxes*

PLANTS IN PRINCIPAL CITIES

A group of 12" Schieren belts in service 31 years.

Schieren Belting

lasts longer

Because it is SCHIEREN-IZED

Schieren-izing is an improved process of manufacture that gives all Schieren Belting a Natural Glove-like Pulley Gripping Surface, Unusual Pliability for use on small pulley drives and a Higher Tensile Strength so that belt hooks or lacing won't pull out. And they are made of the finest belting leather. These are features that go to make for the unusually long life of Schieren Belting. It is the belting of lowest cost per foot per year.

• • •

Write for Catalog and Prices.

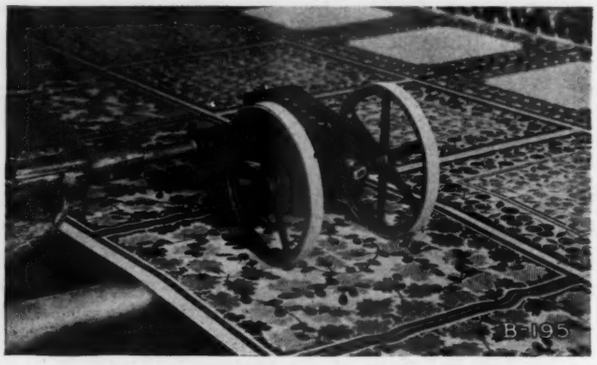
Chas. A. Schieren Company

Tanners and Manufacturers of
LEATHER BELTING,
PACKINGS and TEXTILE SPECIALTIES

Main Office and Factory
31 FERRY STREET, NEW YORK, N. Y.
Dixie Tanneries: Bristol, Tenn.

A SCHIEREN-IZED BELT NEEDS NO "BREAK-IN"

MEMBER OF POWER TRANSMISSION COUNCIL



What Yardage?

Whether it is on ladies' handkerchiefs, as shown above, or lace curtains, the Model 5-T-9 Productimeter will give an accurate yardage. This Productimeter with ball bearings throughout, rubber rim wheels, and high speed is used generally on tenters and winders and wherever lengths of wide fabrics are measured.

Write for our catalog of counters for textile uses, including lineal measuring counters for webbing, cord, braid, etc., pick counters, and a wide variety of stroke, rotary, quick reset, predetermining, and electrical counters. Our field engineers will be glad to call any time that you have a counting or measuring problem to discuss.

DURANT MFG. CO.

181 Eddy St.
Providence, R. I.

1922 N. Buffum St.
Milwaukee, Wis.

something was wrong and we know, too, that those ends should have the slight "bouncing" effect. What department would suffer on account of this, your contributor asks. Naturally, the spinning, slashing and weaving departments, on account of stretched roving producing weak yarn, would surely suffer.

I readily understand that the young fellow was or is handicapped through having old time machinery, but surely that is not a good alibi for such conditions. Take the information given by your contributor in his sixth paragraph. He states that he noticed that the casing on the carriage of those frames was made of wood and this casing covered the bobbin gears and several bobbin gears were jumping. He also states that the overseer explained that on account of such a casing it was impossible to oil the gears without removing the casing, and he had them oiled when the spindles were oiled.

Now, I am wondering how it could be altogether impossible to oil the bobbin gears because surely there is enough space in the holes in the casing over the gears in order to place the bobbins on the gears, and bobbins are usually off of the carriage when oiling is done on gears or spindles. Anyhow, I am inclined to think that lack of oil on those bobbin gears was not the chief cause of the jumping. Probably faulty meshing of the gears to the shaft bevels. There are many modern card rooms today where oiling of bobbin gears is never given a thought, though needless to say, this is a mistake.

However, not knowing the type of frame being used, it is hard to give any opinion as to what could be done to facilitate the oiling of the gears, but I think that I would look around for a means to lower those casings so they would fit under the gear flanges. It seems to me that it would be possible to lower them say ⅜-inch.

So, while gallivanting around, "CONTRIBUTOR NO. 6123" asked the overseer what staple he was running and was informed that it was 1 1/16-inch. He also asked for his roll settings and these were, front to back, 1 5/16-inch, but the back and middle roll settings were fixed as the stand was in one piece, the setting being 1½-inch.

Regarding the roll settings, one cannot define one way or the other, because I have seen so many different settings for the same staple produce equally as good results in every case; furthermore, we all have our pet theories regarding roll settings and standard settings are forgotten these days.

However, as a remedy for that "fixed" setting, there seems to be only two things to do, either new stands to allow a movable setting of the back and middle rolls, or have the old ones remodeled to allow for movable bearings.

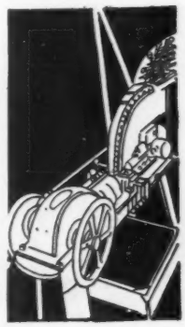
As our friend passed by a certain frame he raised a clearer and found that the top rolls had a concaved surface, and the overseer was satisfied to inform the visitor that the roll traverse motion was of an old type and its stroke could not be altered and he could do nothing about it.

Well, I know of old type traverse motions, very old type, where any adjustment could be made, and I think this young man was a little short of common deduc-

MORE

INTERESTING FACTS

ABOUT TYPE K



SAFE AND EFFICIENT

Type K machines have every adjustment, safety device, and attachment to insure cleaning efficiency, safety, and convenience of operation.

It is because such careful attention has been given to the protection of the bobbins and the machine that Type K machines may be operated at such high speeds.

LOW UPKEEP COST

The average upkeep cost of Type K machines is very low because of their rugged construction and the safety features that have been provided.

SERVICE...REPAIR PARTS

Every machine is adjusted to sample bobbin before shipment, when sample is sent us.

We supervise each installation, where distance will permit, and train your operators and mechanic in the proper method of handling the machine.

An Instruction Manual and a Parts Catalog is sent with each machine.

Stocks of repair parts are carried at the factory in Charlotte, N. C.; by Mr. Luther Pilling, Danielson, Conn.; and by Geo. Thomas & Co., Ltd., Manchester, England.

SUMMARY

The Type K is more than a mere machine. It gives you direct control over filling waste; helps keep your mill clean, saves bobbins, insures rapid cleaning, and saves its cost in wages within a few months.

Write today, without obligation, requesting a Terrell representative to estimate the savings Type K will make in your mill.

the new **TYPE K** *Bobbin Stripper*

The Terrell Machine Co., Inc.

1214 North Church Street
CHARLOTTE, NORTH CAROLINA

MR. LUTHER PILLING, *Danielson, Connecticut, Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*

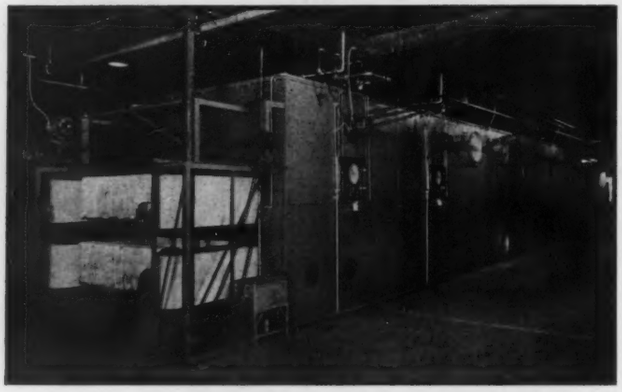
QUICKER DELIVERIES . . IMPROVED QUALITY

FROM

NEW PROCTOR SKEIN DRYER

says

FRANKLIN RAYON CORPORATION



• "The dryer illustrated is a conspicuous example of improved equipment that we are using to improve deliveries," says the Franklin Rayon Corporation in recent advertisements which show the Proctor Dryer above in their plant. "It is important to note that this machine does not sacrifice quality in speeding up deliveries. On the contrary, it improves quality, as compared with older types of machines, for it not only dries but also cools the rayon and delivers it reconditioned to normal 11% moisture regain."

This new Proctor Automatic Yarn Drying, Cooling and Conditioning Machine with Traveling Skein Protector was installed in the Franklin plant within the space formerly occupied by two older automatic machines. It increased output 140%, drying and conditioning 900 lbs. per hour compared with 375 lbs. per hour (drying only) from the two older machines combined. It almost doubled man-hour output, saving 48% in man-hour cost. The saving in space, steam and power, and the general improvement gained, proved this new Proctor Dryer a most profitable investment.

Detailed proof of these savings, with other interesting performance facts, are given in the report of a survey in the Franklin Rayon Corp. plant, endorsed by the management. A copy is yours for the asking.

●

PROCTOR & SCHWARTZ, INC
PHILADELPHIA

WHY DISCARD . . . . . *worn* ROCKER SHAFT BRACKETS?

A simple operation, rebore and press in a Johnson Bronze General Purpose Bushing and it will serve longer and more efficiently than the original Bracket. Save on Power, Maintenance and Costly Delays (shut-downs).

This is only one of hundreds of uses in Textile Plants for Bushings or Bearings that are served by Johnson Bronze. Over 600 sizes of General Purpose Bushings are listed in Bulletin 339-A. Write for your copy.

JOHNSON BRONZE
Factory and Offices, NEW CASTLE, PA.

BRANCH OFFICES

New York City	Philadelphia	Atlanta	Chicago
171 Lafayette St.	310 N. 17th St.	544 Spring St.	315 DesPlaines St.

●

Have YOU a Problem ?

■ *in warp dressing*
—then why don't you try
WEAVEWELL
Slashing Products

■ *in finishing*
—then why don't you try
FINISHRITE
Finishing Products

■ *in tying-in*
—then why don't you try
TY-RITE
for efficient tying-in

Cotton mills throughout the entire South now depend on these products for solving their problems. Our laboratory, chemists and service men are always at your disposal.

FRANK G. NORTH, INCORPORATED

Mortgage Guarantee Bldg., Atlanta, Ga. Phone Main 3665
Plant at Marietta, Ga., Phone 250

tion. It seems beyond reason that the makers of those particular frames would apply such a traverse motion to their frames in order to spoil so many rolls in addition to causing bad work. Probably that certain roving traverse rod was sticking and required attention, and the overseer didn't know about it. Of course, that concave surface is also conclusive evidence that he had too much twist in his roving, which would also cause the hard ends.

As "CONTRIBUTOR NO. 6123" passed by the creels, he noticed several bobbins of intermediate roving pulling over these ends and pulling down around the bottom of the bobbins. I should think that those broken porcelain cups and the other make-shift cups had a great deal to do with retarding the revolving of the bobbins in the creel, or maybe his creel rods were set too close to the roving for that particular lift. It is possible, however, that his bobbins or roving had an imperfect taper, probably caused by tenders tampering with the tension as mentioned before.

Now, "CONTRIBUTOR NO. 6123" claims that he asked his friend why he didn't reduce his spindle speed, and the young fellow claimed that this was impossible as those frames were built to run at the factory and that his job was to run them. It would appear that those frames had "non-changeable" features everywhere. Anyhow, I think in that case I would take a shot at slowing the whole business down to insure better running work.

However, "CONTRIBUTOR NO. 6123" wants to know what other changes would be necessary other than changing the gears in the spindle train. The revolutions per minute of the front roll would have to be changed to suit a given twist per inch and a given spindle speed.

Suppose we decide upon 1,100 r.p.m. as the spindle speed, and we have a front roll diameter of 1¼-inch and we required a twist of three turns per inch. Here's the example:

(a) $\frac{1{,}100}{3} = 366.66$ inches delivered.

(b) $\frac{5 \times 22}{4 \times 7} = 3.928$ inches circumference of front roll.

(c) $366.66 \div 3.928 = 93.3$ revolutions of roll or in one operation thus:

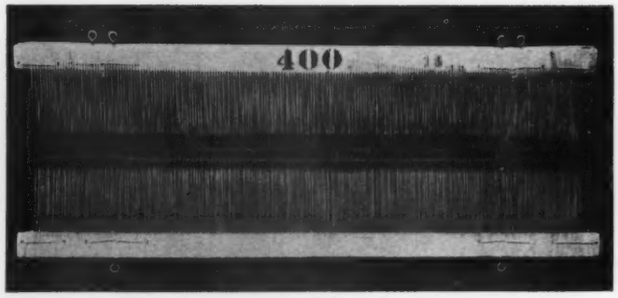
$$\frac{1{,}100 \times 4 \times 7}{3 \quad 5 \quad 22} = 93.3.$$

Now, to find the twist gear for the connection we proceed as follows, taking the gears from an old Asa Lees frame and working from the front roll as a speed calculation.

A compound carrier to which is attached the twist gear has 42 teeth; middle top cone shaft gear is 34 teeth; front roll gear, 150 teeth; end of cone shaft, 50 teeth; twist gear, 42 teeth. Hence we get in one operation, $\frac{42 \times 34 \times 150 \times 93.3}{336 \times 42 \times 50} = 28$ twist gear.

I have taken the gears from an old type of frame, thinking this may suit the case in hand. In closing let me say that all our friend saw in that card room must have been more than a revelation. It must have been a curiosity.

D. E. (R. I.)



Here's the Harness for BETTER WEAVING

Chafeless Cord decreases warp breaks and lessens loom stops; adds remarkably improved cover to fine and medium weaves. Cuts repair and renewal costs, too.

We have gone to great lengths to make Chafeless Cord the finest "producing" cotton harness made. Each change that we've made has been dictated by more efficient weaving demands. For instance:

BETTER COVER. Varnish blisters, rough edges and cracked surfaces cut tiny lint fibres from warp ends. This makes for sleaziness. To reduce this trouble, 5 glass-smooth coats of varnish, baked 8 hours each are applied to Chafeless Cord to produce a remarkable evenness of finish. Thus this Warp-Saving Finish allows warp ends to come through free and full, to go into the weave, filling up spaces. The result is Better Cover.

EFFICIENT PRODUCTION. Since some harness is too rigid and harsh, our next step was to incorporate in Chafeless Cord a faultless flexibility along with its smoothness. As a result weavers report a reduction in warp breakage and loom stoppage. So Chafeless Cord gained a reputation for production benefits.

LOWER REPAIR & RENEWAL COSTS. We discovered that it was the durability of twine finish, not the strength of the twine that was responsible for harness life, so we developed a tough, flexible chafe-proof finish that outlasted ordinary harness considerably. Then we added a humidity proof overdressing making Chafeless Cord impervious to moisture as well as wear. The result is a longer-life, more economical harness.

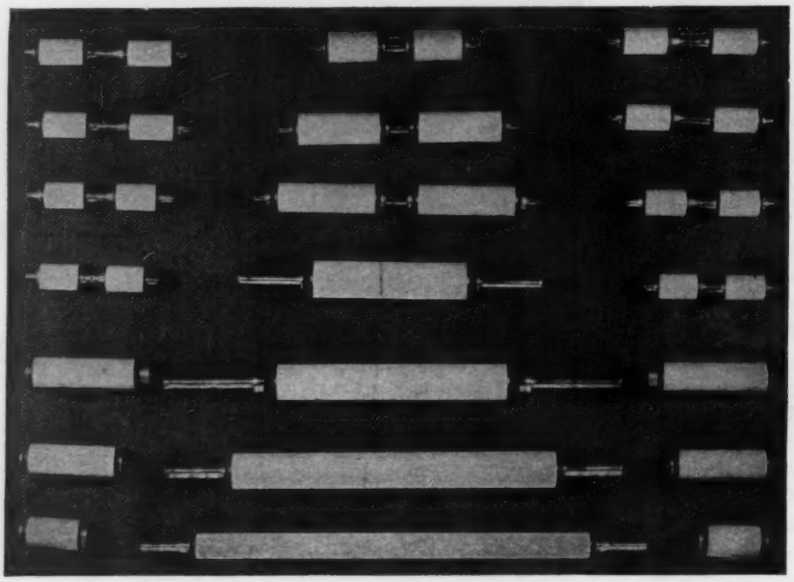
If you are interested in ways and means of cutting harness costs; in improving the quality or quantity of your weave, send us your specifications for Chafeless Cord Harness. Equip a section: see for yourself the better weaving results possible with a harness with a Warp-Saving Finish. Write, telegraph or telephone:

EMMONS LOOM HARNESS CO.

Lawrence, Mass.

Manufacturers of

Cotton Harness — Mail Harness — Selvage Harness
Flat & Duplex Steel Heddles — Non-Skid Mail Harness
Jacquard Heddles — Mending Eyes and Twine — Heddle Frames
Pitch Band Reeds — All Metal Reeds — Warper and Leice Reeds
Slasher & Striking Combs — Wardwell Loop & Doll Pickers



Predominating!

Even felt cloths can stand out in their field, as is proven by the unanimous approval of "Philadelphia" throughout the textile industry.

Roller Cloths of the correct cushion and uniformity.

Clearer Cloths with thick strong nap that cannot pull out. Uniform length that clears rolls entirely of short fibre.

Slasher Cloths with enough cushion and porosity to thoroughly force sizing into yarn.

Philadelphia specializes in Stamping Blankets, Palmer and Sanforizing Blankets for Finishing, and Lapping Cloths for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.

PHILADELPHIA FELT COMPANY
FRANKFORD, PHILADELPHIA, PA.

Philadelphia *Felt Cloths*

PROVEN IN SERVICE

What's the Cost of Oil Spattered Warps?

Get the answer and you will know why dripping, leaking oils are costly no matter how low in first cost.

7 out of 10 leading mills use NON-FLUID OIL because they *know* it stays in bearings, saving many times its cost by keeping off warps and woven goods.

They know too . . . that NON-FLUID OIL saves money on both oil cost and cost of application by outlasting liquid oil 3 to 5 times.

Check these savings in your own mill.
Write today for testing sample

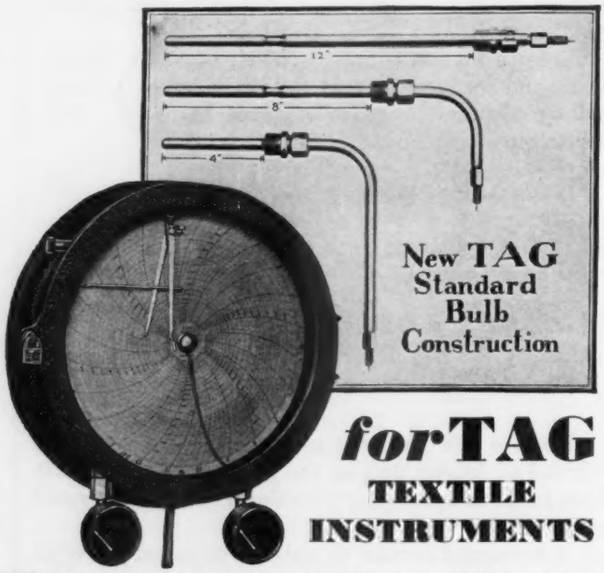
New York & New Jersey Lubricant Co.
Main Office: 292 Madison Ave., New York, N. Y.
So. Agent, L. W. Thomason, Charlotte, N. C.
WAREHOUSES

Chicago, Ill.	Providence, R. I.	Atlanta, Ga.
St. Louis, Mo.	Detroit, Mich.	Charlotte, N. C.
New Orleans, La.	Spartanburg, S. C.	Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



for TAG TEXTILE INSTRUMENTS

THE TAG Standard Bulb is supplied in 12-inch and 24-inch lengths with adjustable union which is permanently fastened at any point of the bulb extension. The sensitive portion is 4-inches long. Thus, any length from 4-inches to 12-inches is made of the same units and the unused bulb extension is bent at a right angle forming convenient elbow.

ADVANTAGES

All stainless steel construction at practically same price as brass because of quantity production.

Longer testing period because instruments are stocked in commonly used ranges and tube lengths. Instruments are retested when withdrawn from stock for order. Result . . . improved shipping schedule.

Write for Bulletin No. 1060-72

C. J. TAGLIABUE MFG. CO.
Park & Nostrand Aves., Brooklyn, N.Y.

Suitable Slasher Cloth and Roll Weights

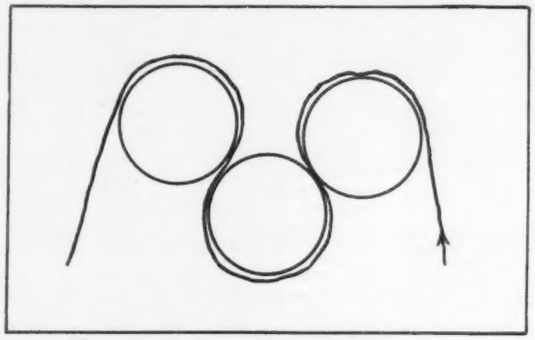
Answers a question by giving actual practice on 21½s yarn, as to weight of squeeze roller and slasher cloth . . . . . .

EDITOR COTTON:

I note on page 73 of the January COTTON the question from "CONTRIBUTOR NO. 6355'" as to the proper weight of roll, and slasher cloth, to use on his 22s warp yarn, with a twist multiple of 4.64, approximately 3,000 ends per set, 96 x 64.

On 21½s yarn, having a 4.75 twist multiple, we are using a 600 pound squeeze roller covered with slasher cloth weighing 20 ounces to the yard and being 62 inches wide. This cloth preferably contains between 65 and 70 per cent wool, and while it is not the most expensive, it should not be the cheapest grade.

As to the amount of size left in the warp, we find (by bone-dry de-sizing tests) that from 11 to 14 per cent gives the best running work. I might state



Three-point immersion system . . .

that we are using a 3-point immersion system which has proven very satisfactory on this class of work, due to the increase in penetration.

Using the hook-up as described with what we call our heavy size formula (160 pounds of starch, 26 pounds of size compound, 2 pounds of Japan wax) we feel that very satisfactory results can be obtained. I would like to add that we are using a circulating size system, and holding our size box temperature at 190 degrees F.

CONTRIBUTOR NO. 6360.

Have You Saved Yours?

IF you have saved all of the copies of COTTON that you received during the year 1934, and would like to have a topical cross-index of all of the articles and discussions appearing during that year, let us know. This cross-index lists for you in one place all of the articles appearing during the year on each subject, so you can readily find any article of interest pertaining, for example, to Carding, without having to look through all of your copies. All other subjects are similarly covered.

BUT, don't ask for an index unless you have a complete file of COTTON for 1934. We cannot supply any back issues.

A similar index on 1935 will be ready at the end of the year, so save your copies of COTTON for this year.—THE EDITOR.

Announcement

•

Mr. Kenneth A. Durham

1112 Commercial National Bank Bldg.
CHARLOTTE, NORTH CAROLINA

will be pleased to discuss TEXTILE MILL FINANCING as well as the details of Textile Banking service as applied to the distribution of textile mill products, with any interested Banker or Textile Mill Executive.

(Like Selling for Cash, Without Credit Risk)

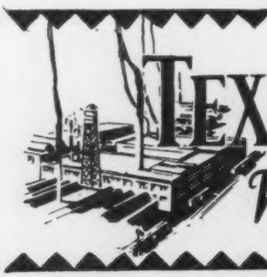
•

CORRESPONDENCE INVITED

•

TEXTILE BANKING COMPANY

55 MADISON AVENUE
NEW YORK



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

25. "Lapogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc., Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—A 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

70. Fafnir Ball Bearings for One Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

73. New Reeves Catalog No. 99—a treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

78. Booklet L 1289 A—Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

90. Atwood Booklet—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

92. Silicates of Soda—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

95. Onyx Processing and Finishing Compound Catalog—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, covering every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

101. Bulletin No. 169-1, Recording Thermometers. 48 page booklet describing and illustrating how the installation of proper instruments will result in worth-while savings. Foxboro Co., Foxboro, Mass.

102. White and Light Shade Cotton Fabrics Dyeing and Finishing. National Oil Products Co., Harrison, N. J.

103. Throwing Rayon Crepe. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. Some Properties of Starch and Dextrine—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

114. Denman Parts for All Makes of Looms—showing drawings and dimensions of Denman pickers, hold-ups, bumpers and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 653 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

125. More Light with Lasting Cleanliness—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

134. STA-PUT Lubricants—A brief description of an entirely new type of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1933 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment, covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts, and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

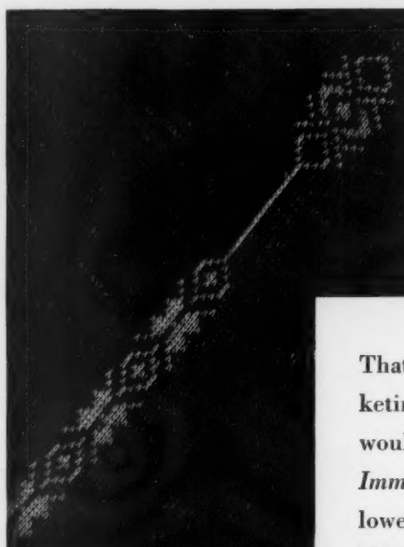
143. Winders and Winding—Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

145. Never Buy Sponges in the Rain—a booklet outlining the importance of knowing the percentage of moisture in a given textile in the buying and selling of the same and in connection with the working of textile fibres in the process of manufacturing the goods, also showing different types of conditioning ovens for determining moisture content. Emerson Apparatus Co., 174 Tremont St., Melrose, Mass.

146. Lubrication Cost Recording—Outlining the factors to be considered in determining correct lubrication costs, and showing a number of typical lubrication cost sheets to assist a mill in installing an efficient lubrication cost system. Gulf Refining Company, Department C, 3800 Gulf Bldg., Pittsburgh, Pa.

KNITTING SECTION

THE NEW HH-NRP MACHINE
AN INSTANT SUCCESS!



That this new machine offers tremendous marketing advantages is an undeniable fact. That it would achieve an *ultimate* success was inevitable. *Immediate* and *widespread* approval have followed the recent announcement of the HH-NRP! Mills are responding with orders...urgent orders. For the HH-NRP offers a new range of patterning possibilities. It retains all of the well known HH efficiency.

Already, in the mills of those who were quick to realize its advantages, the HH-NRP is paying for itself . . . bringing in new business!

Here is a brand new machine... presenting brand new opportunities.

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

366 Broadway, New York, N. Y.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

NEW ATTACHMENT VASTLY INCREASES PATTERN SCOPE

of the Standard 80-w and 80-w Shog machines

Now it is possible to wrap 1 to 4 needles in any combination with each wrap finger making panel wrap patterns on the Standard 80 W and 80 W Shog machines!

This new development tremendously increases the pattern scope and the variety of effects. These two samples illustrate the added possibilities the new attachment offers.

There's a growing demand for these exclusive half hose. Meet it with the Standard 80 W Shog machine. The variety of the effects you can achieve with this machine—and *only* this machine—is almost unlimited! The market is there. The Standard 80 W Shog is the answer!

STANDARD TRUMP
ESTABLISHED 1872

STANDARD-TRUMP
BROS. MACHINE CO. INC.

366 BROADWAY, NEW YORK, N. Y.

Modernization and Maintenance in the Knitting Plants

By R. L. P. Reifsneider

HERE will be found an authoritative discussion of current and prospective developments of importance in the different fields of knitting. What the trends have been, and what appears imminent, in machinery progress in seamless and full-fashioned and other knitting, as revealed by a thorough investigation, is clearly presented in this article . . . . . .

INTEREST in the newer models of hosiery knitting machines would seem to presage considerable new installation in 1935. Some contracts for rather important installations of full-fashioned equipment have been entered into, for machinery that should be in production by the end of spring. These commitments, however, probably are but a fraction of what will be made. Modernization always has proved infectious, gathering momentum as competition is found to demand it.

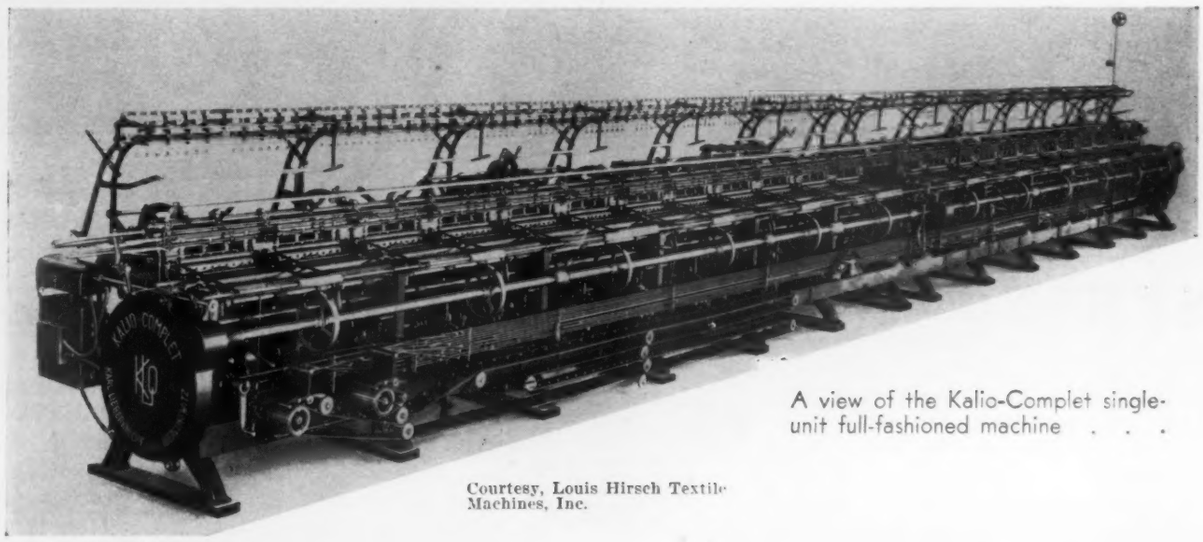
New installation of flat knitting equipment seems likely to continue on a somewhat conservative basis for a time, being perhaps curbed by the fact that a great part of the existing machinery has been equipped with the three-carrier attachment, a development of 1933 which saw remarkable growth in 1934. Some interests may feel that with the improvement in fabric that is assured by the use of this device, further modernization is not so essential at this time, since better types of stockings from machines so equipped are finding a broadening outlet, whereas without this invention results that for some time had been sought could not have been attained with even the down-to-the minute models that have been created by machine builders.

Where there shall be new installation in the full-fashioned industry there probably will be, in large measure, corresponding utter destruction of obsolete and semi-obsolete equipment of coarse gauge. In the seamless hosiery industry modernization of plants consists in great extent in the rebuilding of machinery that has been out of commission for months and, in many cases, years, due to change in style and character of construction by which improvement in the stockings covered a wider and more important range than in the full-fashioned field.

Modernizing Existing Equipment Prevents Causing Excess Production

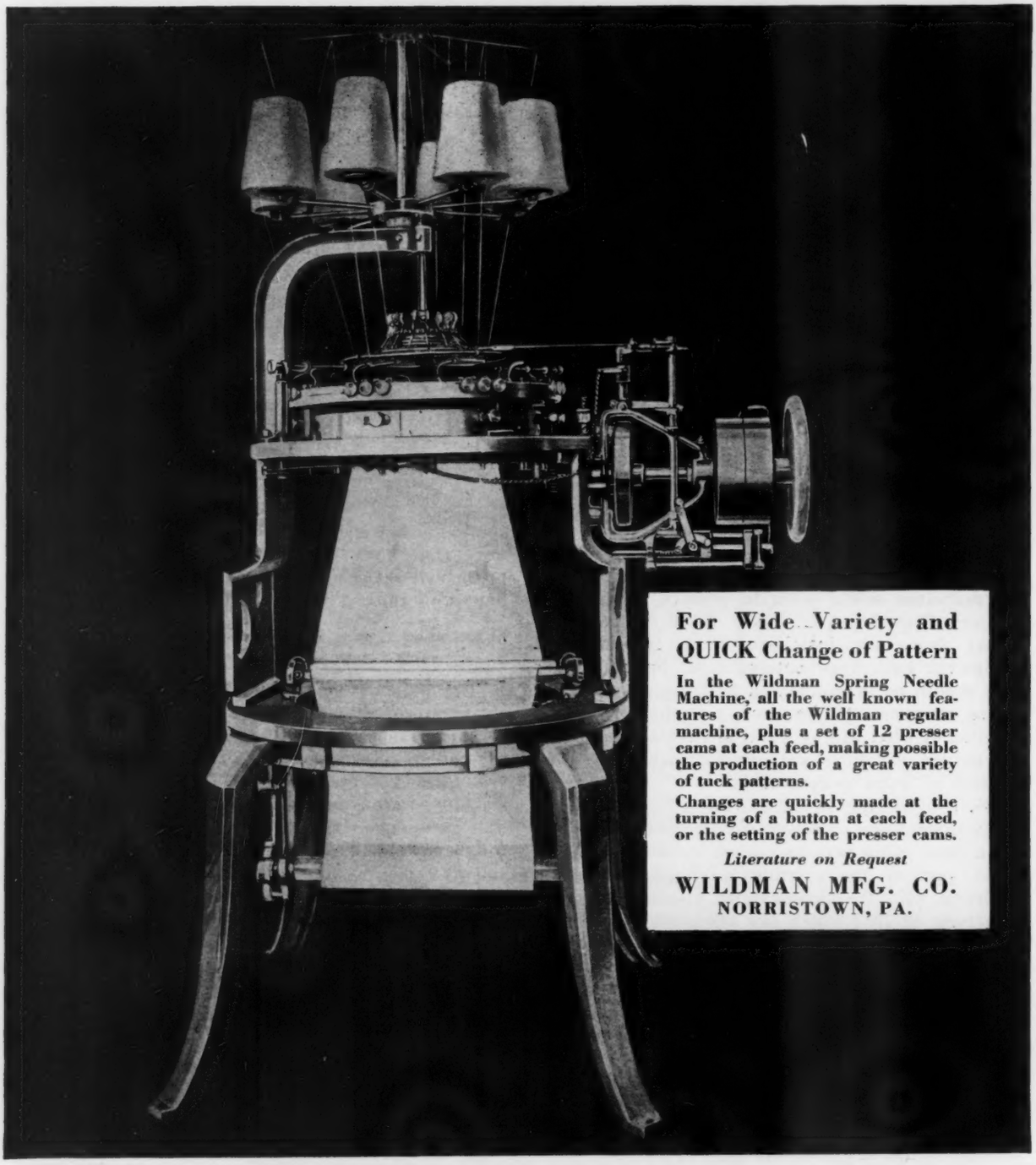
Demand for used circular machines assumed amazing proportions last year. Manufacturers who had stored machines falling into disuse are having a substantial return from their temporarily frozen investments, and there is much regret that 84-needle machines were scrapped as they fell into disuse, few mill men conceiving there ever would be found use for them. Machine dealers recently have had a considerable inquiry for them. Manufacturers of full-fashioned hosiery could not well find space for storing machinery marked for replacement and were prone to take advantage of the ready market for used flat knitting equipment, converting it into the wherewith for the acquisition of the more modern.

Manufacturers found by experience in somewhat



A view of the Kalio-Complet single-unit full-fashioned machine . . .

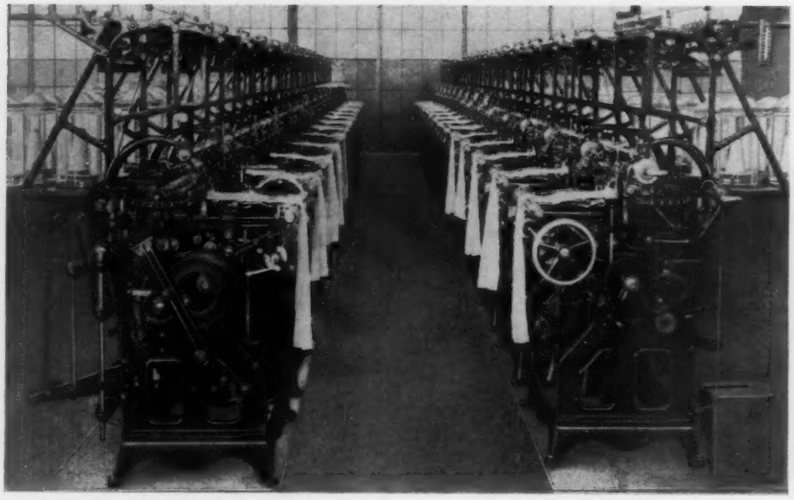
Courtesy, Louis Hirsch Textile Machines, Inc.

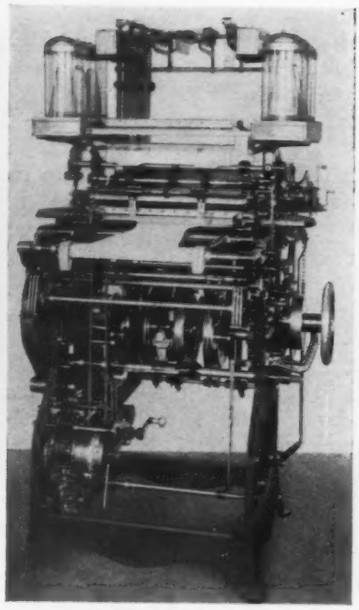

For Wide Variety and
QUICK Change of Pattern
In the Wildman Spring Needle Machine, all the well known features of the Wildman regular machine, plus a set of 12 presser cams at each feed, making possible the production of a great variety of tuck patterns.
Changes are quickly made at the turning of a button at each feed, or the setting of the presser cams.
Literature on Request
WILDMAN MFG. CO.
NORRISTOWN, PA.

WILDMAN

SPRING NEEDLE BODY MACHINE

WILDMAN
THE WORLD'S STANDARD





Photos, courtesy Wildman Mfg. Company

Above, a battery of Wildman single-head full-fashioned machines in operation; right, a front view of one of the single-head machines . .

recent years that antiquated equipment which was sold to competing manufacturers, instead of being junked, served to materially increase the production of hosiery of the very type of which there already was a surplus. That is, used machinery representing a small investment for the buyers of it provided for a low overhead in the matter of investment and writing off depreciation, thus perpetuating types of hosiery that were wanted by an element in the retailing trade that seems to thrive mostly on inadequate and destructive prices. So, it is the impression of the trade that much of the new installations will replace equipment relegated to the junk pile.

As explained by manufacturers, when expensive machinery is installed in existing plants the aim is almost universally lower cost of production consistent with quality, and smoother and better-appearing fabric. This implies improvement in the character of the product without corresponding increase in its cost, and serves to establish and perpetuate a market for hosiery subject to less fluctuation than has been the case.

At times in 1934, when prices were on a generally very low level, there was an eagerness on the part of many manufacturers to obtain orders that influenced them to become parties to a chiseling of prices. Numbers of these manufacturers, it is maintained in the trade, in order to make the best possible inventory showing, wrote off depreciation and obsolescence in a very sparing manner. Even at that there was accumulated little or no surplus with which to make new installations. Some of these manufacturers may, unfortunately for themselves, be in a less favorable position this year to compete in the open market after the modernization of plants where less profitless policies prevailed and provision was made for replacement. The latter establishments have thus improved their position in a dual manner, that is, by reducing their unit of cost and producing a superior product, while unintentionally crowding to the wall an element among their competitors that had been contributing largely to the topsy turvy condition of the hosiery market. In other words, it was the manufacturer with relatively modern equipment who was able to operate his plant at minimum cost and maximum output per given hour, who may be depended upon to occupy foremost place among those revamping their establishments in 1935 for not only the present, but for no less keen competition in ensuing years.

Single-Unit Machines Hold Chief Full-Fashioned Interest

It appears a common opinion that the next outstanding development in full-fashioned hosiery equipment will be in the single-unit field, in which no little progress already has been made, but leaving the gates open for a nearer approach to the same measure of perfection of operation as may be said of the conventional type of full-fashioned machine in its latest models. It had been suggested in discussing the fact that machine builders in the United States and elsewhere are engaged in further development of the single-unit idea that this may be deterring some manufacturers from immediate replacement with machines of the types in more general use.

The perhaps more convincing testimony of the utility of the machine that knits a full fashioned stocking complete, eliminating the topping process, comes from Isaac C. Eberle, President of the Oakbrook Hosiery Mills, in Reading. Mr. Eberle about two years ago startled the domestic trade by installing a unit of legger-footer machines in 60-gauge. The fineness of the product was satisfactory, but Mr. Eberle thought he saw further possibilities by removing the possibility of mismatching by reason of the transfer from legger to footer, and converted the 60-gauge equipment into single-unit machines. He was one of the first to conceive the idea on which is founded the invention of the three-carrier device, but while he was experimenting with it and bringing it to perfection an inventor stepped in and procured the patent for a device of his own conception conforming in practice to that which Mr. Eberle had

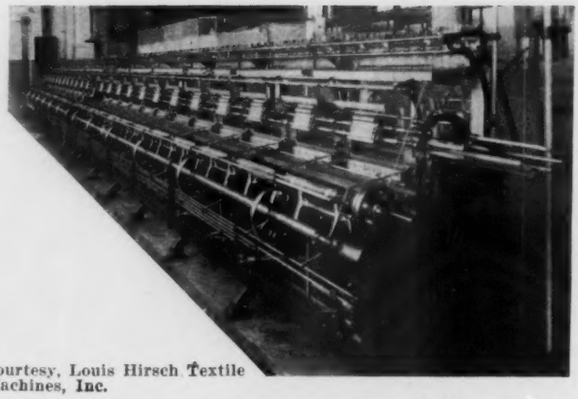
carried beyond an experimental stage. Thus interested in the three-feed system, he applied it to his single-unit 60-gauge machines and recently was engaged in converting the 54-gauge equipment in his plant to single-unit construction, all to be equipped with the three-carrier attachment. He is as enthusiastic over the performance of the machine as he is over the virtual elimination of rings and clouds by use of the three-feed system.

The Oakbrook 60-gauge machines, by the way, are of German build and Mr. Eberle says there are only three other machines of the same gauge in use, and that all of them are in Germany. While he is interested in fineness it appears his chief interest lies in promoting the use of the three-feed system.

Louis Hirsch distributing the Kalio Complet, known generally in the hosiery trade as a single-unit machine coming into increasing use, points to three outstanding developments in the last few years which are already in effect or contemplated in 1935 hosiery plant modernization. He instances the single-unit machine, the three-carrier attachment and the higher twist silk, by which he maintains sheer hosiery that gives better wearing qualities is produced. Mr. Hirsch looks for considerable replacements this year with finer gauge, including, of course, popular gauge of the single-unit production. He makes a point, however, that replacement may not be as rapid as the elimination of old machines, and, therefore, there may be no material decrease in production of hosiery for the time. New installation, he goes on, will gather momentum the further it is carried until, of course, what manufacturers might call the saturation has been increased. Which leaves a phase of the modernization subject to be discussed in after years.

The Wildman Mfg. Co., with its single head full-fashioned machine, has made considerable progress in applying to this equipment the single-unit idea. The company is understood to have perfected one of its single-head machines as a single unit device, presumably for demonstrating purposes or perhaps to be given an initial showing at the Knitting Arts Exhibition in Philadelphia in April. This is a matter which, necessarily, Kenneth Howie, general manager of the Wildman Mfg. Co., is not eager to discuss at this time. He is, however, a believer in the three-carrier attachment, and it is to be assumed, in the absence of any official utterance on the subject that the Wildman single-head, single-unit, three-feed machine will be a commercially complete development of the not distant future.

The single-head machine has been built in 54-gauge, which, however, found its better market last year in England. Under code regulations, it was not profitable to undertake to compete in the domestic industry with hosiery of coarser gauge than 54, that is, in 4-thread construction more especially. While 4-thread 54-gauge is said to have been not easily marketable in the United States, British manufacturers seem to find a profitable outlet for it. Taking this view, it would appear that the successful exploitation of 54-gauge single-head machines has been retarded by the operations of the hosiery code, which in this instance tended to restrict new developments. The requirements of the domestic markets, it may be pointed out, differ from those prevailing at the time existing codes were formulated.



Courtesy, Louis Hirsch Textile Machines, Inc.

Another view of the Kalio-Complete single-unit machine with Tambour lace attachment .

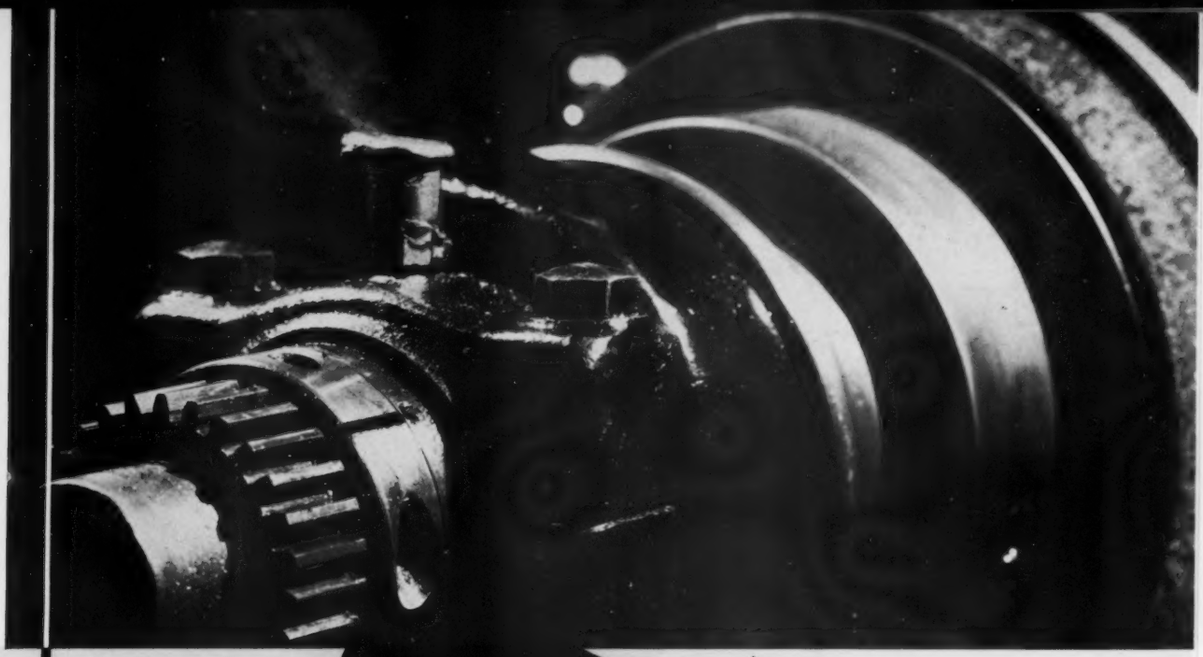
Assuming, it is held in the trade, that codes will have to be adapted to developments since they were formulated, it is reasonable to suppose that probably the next step in refinement in full-fashioned hosiery will be such developments as will enable manufacturers to produce 54-gauge at a considerably less cost than at the present. In fact, Mr. Howie would not be surprised if the cost be no greater than that for 45-gauge. "You regard that as a possibility?" he was asked. "A rather close possibility," he replied.

While there has been and still is a trend to fine gauge in hosiery, as every manufacturer is fully aware, it seems at first blush a somewhat long step to volume production of anything finer than 45-gauge. According to a survey made by competent authority, the output of 45-gauge machines in 1934 was 73 per cent of the whole. This compares with 53 per cent in 1929. In no year since then has the output been less. The lowest since 1929 was 57 per cent in 1930 and 71 per cent in 1931 and 1932, it is shown in the survey referred to. In the meantime, the percentage of output of 42-gauge machines dwindled from 41 per cent of the whole in 1929 to 18 per cent in 1934. There were increases in production of 51-gauge in 1932 which amounted to 10 per cent of the whole and again in 1933 when it was 20 per cent of the total. A smaller percentage of this gauge machine was produced last year, when 54-gauge of the legger-footer type got into the picture in a small way.

A deduction from the showing by the survey is that 1935 installation will be largely of the type of machines that were the more popular during the five fiscal years since the beginning of the depression. It is regarded as not improbable, however, that as very satisfactory results have been obtained from the limited number of 51-gauge, more of this type equipment also may figure in 1935 modernization.

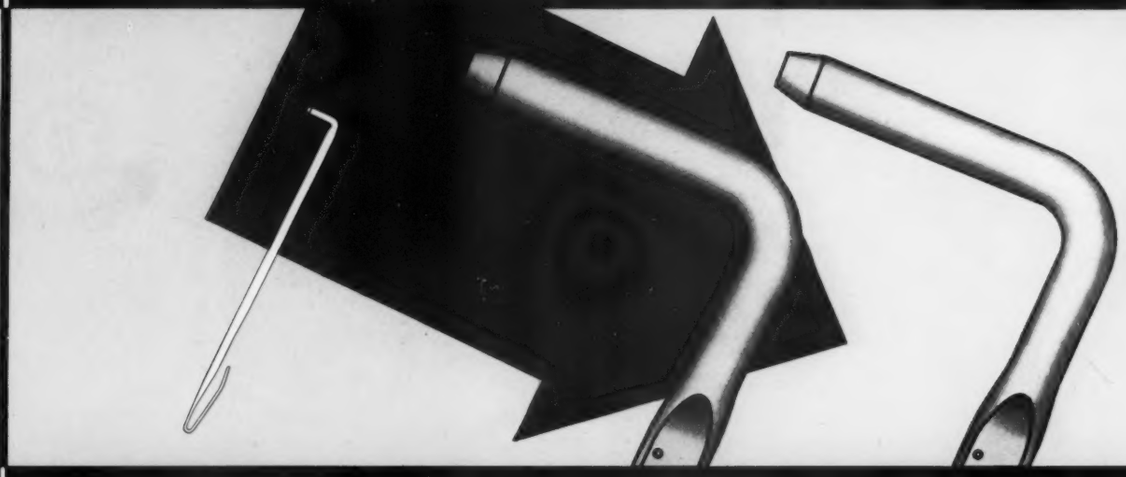
Improvement by Attachment Big Seamless Development

Some of the hosiery manufacturers are going to re-vamp their plants this year whether they want to or not, is the opinion of the executive of one of the



OUR PHILADELPHIA RENEEDLING PLANT

1. Every job is handled by experts working with special modern equipment.
2. Each job is kept intact on an individual truck throughout the process.
3. Bars are washed in a special fluid; scrubbed with revolving brushes.
4. Bars are straightened with special device that springs them into shape; brasses resurfaced; slots checked mechanically.
5. Bars are filled with Torrington needles; then straightened and gauged three ways; spaced also — by gauge
6. Beards are raised uniformly — and checked by gauge for height and central setting.



MACHINE MADE MEANS

Uniformly Bent Butts

Here is a convincing example of machine accuracy in the making of Torrington needles. Because uniformly bent butts are necessary to secure uniform knitting, we apply the precision of machines to obtain uniformity in that important detail.

Note in the illustration that the needle butt is bent to the exact angle that gives the firmest "set" when placed in the hole. "Machine-made" means that the angles are unvaryingly uniform . . . that every needle is bent exactly the same as the next. For unless the butts are uniformly bent, uniform overall length is impossible.

There's no guess work in the manufacture of Torrington needles. Torringtons are made by machines that are consistently accurate, not only in producing needles that are uniform in length, width and temper — but uniform in all the minute details that count in achieving the finest knitting results.

TORRINGTON Spring Beard **NEEDLES**

AVOID

FRAYED YARN!

NEEDLES OF UNIFORMLY *SMOOTH FINISH* WILL IMPROVE THE QUALITY OF YOUR FABRICS

How to avoid frayed yarn — one of the most annoying and costly of all knitting problems — is a question that deserves your most careful consideration.

Sometimes needles are to blame. Needles with a rough, uneven finish catch in the thin strands of the yarn and the result is ragged, uneven knitting. That is why we have taken such care in perfecting the finish of Torrington needles . . . why the surface of a Torrington needle is uniformly smooth . . . entirely free from rough spots and sharp edges. If frayed yarn is one of your problems, we invite you to put Torringtons to the test. Prove to yourself that more uniformly finished needles will improve the quality of your fabrics . . . and reduce your knitting costs through smoother, longer service. You will find that it pays to protect your fabrics with good Torrington needles.

Torrington needles are made by machine. That is the reason for the uniformity of their finish . . . the exceptional strength of their temper . . . and the unvarying accuracy of their performance. Knitters in all parts of the world attest to the fine qualities of Torrington needles. They know that the Torrington machine-made method assures latch needles that stay in service . . . needles that are strong, smooth and uniform in every dimension.

The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

BRANCHES:

THE TORRINGTON COMPANY,	1840 FAIRMOUNT AVE.,	PHILADELPHIA
THE TORRINGTON CO., INC.,	200 FIFTH AVE.	NEW YORK, N. Y.
THE TORRINGTON COMPANY,	530 SOUTH WELLS ST.,	CHICAGO, ILLINOIS
THE TORRINGTON COMPANY	UNITED BANK BLDG.	GREENSBORO, N. C.
THE S. H. SUPPLIES CO.	210 SOUTH STREET	BOSTON, MASS.
LOS FABRICANTES UNIDOS,	984 CALLE BELGRANO,	BUENOS AIRES

FACTORIES AT:

TORRINGTON, CONN. — UPPER BEDFORD, QUEBEC

COVENTRY, ENGLAND — AACHEN, GERMANY

TORRINGTON NEEDLES

Latch

more important manufacturers of knitting machinery who for years has been a close observer of the trend to plant modernization. The increasing interest in new machinery, as compared with the early weeks of recent years, indicates that numbers of manufacturers contemplate important installation of some type or another by which to give them an entry into new fields or perhaps reduce the cost or improve the product of their equipment. The interest seems to center in matters making it possible for the hosiery manufacturer to present some innovation that will give him an edge on the matter of obtaining business, after a considerable period of inactivity and painfully thin profits. It is the expectation that 1935 will be made to show profit in numbers of mills where losses on production were suffered in 1934.

Not all of the improvement of plants will be obtained by new installations, notably in the seamless division, where, according to some leading manufacturers of circular machines of the more modern type, there is considerable equipment on the retirement list temporarily. The point is made that circular machines are relatively so simple in construction and so well built that they last too long to be really profitable to their builders. For example, many of the machines on the idle list, tenderly cared for with suitable covering in the hope they would some day become useful again, were crowded out of the knitting room by changes in style. Outstanding in this respect is a rib machine that is out of commission for the time, since the once universally popular children's ribs passed out in competition with striping, gay colors and a variety of combinations, in shorts and full length.

Not so many years ago children's ribs, combed and carded, were rated as staple as nails in a hardware store. There is a possibility of their return in some other form as, it is reported by some distributors to retailers, there is developing an interest in circular knit ribs with a full-fashioned foot. Just why, is not stated.

Several machine manufacturers whose establishments were extremely busy during the last quarter of 1934 and are still well employed, state that a large part of this activity must be attributed to the production of parts for reviving equipment that had been set aside as for the time obsolete due to change in style. One of these builders says "it has been surprising that so many old machines have been sent to the various knitting machine manufacturers to be re-vamped and put in condition for meeting style requirements demanded at this time. There seems to be about three times as much volume in this character of work," he states, "as in absolutely new machines. This is easily accounted for, because if a mill can conserve any of the asset value of old equipment, it will do so."

In view of the thin profits taken down by so many manufacturers of hosiery in the past year or two, relatively few, it is held, may have either money or credit facilities for buying absolutely new machinery and throwing out the old. It is pointed out that as the industry has been passing through a few years of practically non-profit operations, numbers of the mills have neglected to write off their equipment to the same extent as if conditions had been more profitable.

Probably one explanation for a negative view as to any extended new installations in 1935 is that there have been no particular revolutionary developments recently in the seamless industry, either through manufacturer units or competitive organizations. The point is made that from 1920 to 1930 improvement in seamless hosiery knitting machines was so rapid and so comprehensive that it hardly could be expected that many changes are to be looked for as a mere result of a reaching out for facilities by which to produce innovations. Such improvements as may be made this year, it is suggested by a manufacturer of machinery may be ascribed to a flash of initiative rather than to research or a groping for mechanical construction looking to a presentation of novelty.

Outstanding in 1934 developments in the seamless knitting was the introduction of construction for laying in Lastex and virtually all kinds of rubber for superseding garters for children's hosiery and men's half-hose, and later, women's hosiery. This laying-in mechanism will not of course supersede entirely devices for knitting in elastic since there are certain types of stockings and flat fabrics in which the knitted-in process necessarily must be employed. Some of the machine builders vision the use of elastic in practically all types of stockings for men and children and a large part of the seamless and full-fashioned for women. Revamping of machinery this year will be called for in the striping of children's hose especially and a multiplicity of high colors.

In a general way machinery prospects for 1935 are regarded better than eventualities in 1934, so far as relates to machinery at large.

Thinks Half-Hose Machine Market Very Promising

While it is a fact there has been considerable activity in rebuilding men's half-hose machines and bringing them down to date, says Walter L. Toy, vice-president of Scott & Williams, Inc., "I feel that the outlook for installation of new machinery is more promising than some of the manufacturers appear to view it. We are extremely busy, not only with rebuilding machines but building also new machines, and we have every reason to expect this condition to continue."

A great many of the older type machines, it is stated by Mr. Toy, both plain HH and hand transfer machines "have been rebuilt into the latter type HH spirals and our new HH-NRP which is a 25-set needle reverse plaiting machine, and this practice no doubt will continue. It is undoubtedly far better for existing mills to rebuild their present obsolete or semi-obsolete machinery, rather than dispose of it on the second hand market, thus creating additional competition."

The point made by Mr. Toy in favor of rebuilding machines, in preference to selling them on the second hand market, is regarded in the trade as well taken and conforms to the policy of some few manufacturers of scrapping machinery that is displaced

Mr. O'Hara says:

« WE CANNOT RECOMMEND YOU TOO HIGHLY »

THE versatility of K. D. T.'s is very well demonstrated by the fidelity and attractiveness with which decorations are applied to such coarse textures as sweat shirts and other apparel for children. Mr. F. H. O'Hara, President and Treasurer of Norwich Knitting Company, Norwich, N. Y., gives eloquent testimony of the adaptability of K. D. T.'s for unusual conditions. Mr. O'Hara says:

"Just as soon as we were licensed by Walt Disney to use Mickey Mouse, Minnie Mouse, Three Little Pigs, the Big Bad Wolf and other cartoons for decorating our various knit-goods products, we turned to Identification Headquarters for the means of giving us the method of reproduction which would be attractive and economical.

"The dry transfers you developed for us have been used exclusively for this purpose ever since. Not only have your products been entirely satisfactory, but our relations have been very agreeable.

"We cannot recommend you too highly to others who may have a problem of decorating or marking fabrics."

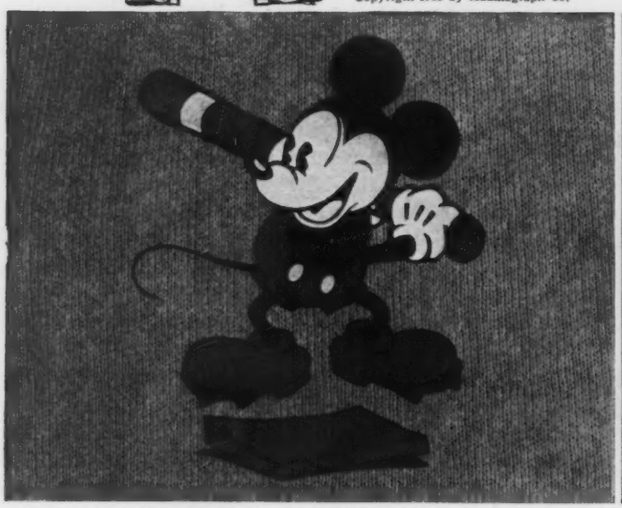
K. D. T.'s are used in one or two colors for a wide variety of textiles and for marking leather also. From the coarsest woven fabrics, such as carpets and blankets, through the range to the finest woven or knitted silks, K. D. T.'s prove their merit for attractive, distinct identification or decoration. Tennis balls, felt hats, gloves, neckwear are some of the usual uses for K. D. T.'s. Perhaps their versatility may suggest a place for K. D. T.'s in your production. A request will bring a representative for consultation.

KAUMAGRAPH COMPANY
200 VARICK ST., NEW YORK CITY

CHICAGO, PHILADELPHIA, LOS ANGELES, CHARLOTTE, N. C., CHATTANOOGA, TENN., BOSTON, PARIS, ONT., MANCHESTER, ENG., MEXICO, D. F., PARIS, FRANCE, BUENOS AIRES, ARGENTINA.

Kaumagraph protects product package identity

Copyright 1935 by Kaumagraph Co.



in the installation of new equipment by which their own capacity is increased or their product improved and new competition with their former types of hosiery is averted.

The question whether the knee-high type of stocking would be knitted on the seamless machines having been raised in the trade, Mr. Toy was asked for his opinion and said that a number of mills sampled the knee-high on seamless machines and probably are selling the product. This, he adds, "is just a new development that does not require new machinery, as to produce the knee-high stocking means simply a shortening of the chain to produce less fabric."

In line with information obtained from such machine builders as the H. Brinton Co., Inc., Fidelity Machine Co., and Scott & Williams, Inc., practically all of the recent developments of the experimental engineering departments of the Hemphill Company, builders of Banner hosiery machines, have been in the direction of increasing the efficiency of some equipment now in operation, the idea being that the operators may obtain a more nearly even level of profits "under the restrictions and handicaps of certain provisions of the code." It is understood that developments in the general market demand for hosiery have influenced experimentation to some extent, says a spokesman for the Hemphill Co., notably in the perfection of the Banner wrap stripe attachment for application to the plain Banner and the Banner 12-step machines. It appears that near future installation and probably rebuilding will embrace a compensating device for feeding elastic yarn in Banner split-foot machines for the knitting of women's knee-length stockings.

When the bare leg fad invaded the women's hosiery field a few years ago, Banner split-foot machines were able to deliver what at the time was described as perfect construction in seamless bare leg numbers. The new knee-length stocking is being produced, in the better seamless numbers, on Banner split-foot machines, which seemed to enjoy a sort of monopoly in this relatively new field.

The knee-length stockings require of course several courses of elastic yarn in the welt, or the top of the stocking, and a compensating device is understood to be in process of development for handling this type of elastic material on Banner split-foot machines. There is a trend to split-foot construction in men's staple numbers which, being coincident with the knee-length development, practically exhausted the supplies of split-foot machines, which until recently were available. There has been a steady growth in demand for men's white-feet half-hose where the white yarn, knitted with the Banner low heel attachment stops below the shoe line. This also has been a factor, it is learned from dealers in used machinery, in the absorbing of a number of Banner split-foot machines. This type of equipment is understood to be approaching maximum efficiency of production embracing a suture-seam, narrow-extra-high-splice and triple toe, and stitched "evening" attachments. With such devices available for application to machines that have been on the retired list temporarily, it is pointed out, it is easy to account in part for restricted installation of new equipment, so much of the old being restored to its former usefulness.

What is believed in the trade to be a ranking significant development in the field of hosiery machine building is the Banner wrap stripe attachment for producing genuine wrap stripe hosiery on the plain Banner and Banner 12-step machines. This attachment enables the operator of the 19-independent step wrap machines to knit the genuine Banner wrap hosiery for the lower price brackets, while reserving the 19-step equipment for producing hosiery for the the higher price bracket. This provides also for more complete styling and selling, when it becomes apparent that for low cylinder machines the attachment has 6-steps and 12 colors while the higher cylinder equipment provides for 8-steps and 12 colors.

Underwear Going to Finer Fabric Construction

An outstanding tendency in current development of knitting machinery for underwear is in the direction of further fineness of fabric. In fact, Mr. Howie of the Wildman Mfg. Co. says it need not be surprising if some manufacturers offer 34-cut underwear this year, this comparing with the present 16-cut garment produced on Wildman machines. In line with the idea of finer fabric, it appears not unlikely further developments in the use of spring needles will be witnessed. It is understood that practically all of the advances in the direction of finer fabric for underwear have been in rayon, the use of pure silk being much limited.

An interesting disclosure is made, or rather, recalled, in connection with experiments in the use of the multiple feed system by which it is claimed that in hosiery a clearer fabric is obtained. Some years ago there was experimenting with 6-carriers in the knitting of flat rayon fabrics. The results were unsatisfactory and the number of carriers was reduced for diminishing the washboard effect, this being the reverse of processes for improving hosiery fabric.

The manufacturer of the rayon in question claimed that the washboard effect in the fabric knitted with the 6-feed was due to defects in the knitting. That this could not have been the case was clearly and cleverly shown when 6-carriers were fed from but one of the 6 bobbins, the result being a perfect fabric, free from blemishes of any description, leaving the inference that there was unevenness in the rayon threads as there is said to be in silk.

It should be stated in fairness to the rayon industry that the tests referred to were made in 1926, and that since then there has been such improvement in rayon that it has been used experimentally for determining whether it could not be successfully employed in hosiery for obtaining absolutely clear fabric. In support of the affirmative of this proposal, a very sheer stocking, knitted of rayon, in an experimental way, is shown absolutely free of the blemishes complained of in silk hosiery of the conventional type. In the discussion of the subject it was stressed that absolute evenness of thread is possible in rayon while not assured in silk, from the fact rayon is a man-made product and the vagaries of the silk worm are beyond the control of man.

Tapping the cupola—an important step in the manufacture of the fine grey-iron castings used in the READING Full-Fashioned Knitting Machine.

In a 40-hour week the new READING high-production twenty-four section forty-five gauge full-fashioned knitting machine produces nearly sixty per cent more volume and more than seventy-five per cent more value than the ordinary eighteen-section thirty-nine gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

Some Shop Talk on Reducing Imperfects in the Knitting Room

A seamless mill superintendent gives some practical ideas on this important subject . . . .

EDITOR COTTON:

The amount of profit which a seamless hosiery manufacturer can make is controlled to a great extent by how many dozens of perfects he can produce each season. A complete finishing room report showing the total number of dozens of perfects, irregulars, seconds and thirds which have been boxed and shipped each week, month, or for a whole season, tells what has been happening and perhaps what still is happening, but it does not tell how to reduce the percentage of imperfect work.

Not all of the imperfect work which eventually arrives in the finishing department is made only in the knitting room. Each department adds its little bit in one form or another. The knitting room of course actually makes imperfects, but most of the other departments (except mending) make imperfects out of goods which may have been perfect when they left the knitters. A group of well trained gray goods menders can do a great deal toward reducing the amount of imperfects which the mill must dispose of each season. Finished goods menders are also a profitable investment.

The one sure way to reduce imperfections is to concentrate on the knitting department and first find out what is causing the various kinds of imperfections, and then put forth every effort in devising some means to reduce it.

The cost of all direct labor, materials, machine repairs, etc., is the same for good work and bad, even if knitters are paid little or nothing for imperfect work. The cost of mending knitter imperfects (even if they can be mended and passed for good work) will in most cases bring the price per dozen up high enough to equal the knitting cost.

Once the goods have reached the gray stock room there is very little difference in cost between perfects and imperfects. So, the logical point to reduce imperfects is during the first stages of manufacturing, which is mainly knitting. Expert machine fixers, sufficient repair parts, good yarns, suitable buildings and equipment, cheerful surroundings, and last, but not least, a force of well trained knitters—all these things are important and bear constant watching by the knitting room foreman if he expects results.

If all of the foregoing are up to par (they seldom are) there still remains one mighty important item and that, in my humble opinion, is an adequate system of records which will show the efficiency of the knitters, individually and as a whole. My remarks are intended chiefly for toppers and knitters making half-hose, misses' and children's hose. Each mill has its own idea of how such a record is kept and the knitting room foreman makes use of it as he sees fit. To be at all useful the record should accomplish three things: It must give facts; be fair to the knitters; and it should show where the imperfects are coming from.

In order to cover the third item, the record must show whether the imperfects are knitter imperfects passed by the knitter, machine imperfects passed by the knitter, or imperfects found by the knitter and turned in as such. The necessary information showing just what is being accomplished by each knitter comes from the gray inspection department and is given to the office at the close of each day.

Here the record is made up in triplicate, one copy to be kept in the office, one for the superintendent, and one to be posted in the knitting room for the benefit of all concerned.

Keeping from four to six record sheets posted at one time (on a sort of bulletin board) where each sheet can be seen, will give a clear picture of what each operator is doing day by day. An inspection force sufficient in size to take care of the volume of

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

The key to profitable knitting

Achieving fast, even production of a clearer, sheerer fabric is principally a matter of wise needle selection. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality full-fashioned stockings are standardized on Royersford Needles is a tribute to unvarying workmanship.

The prescription for better knitting

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. · Louis Hirsch Textile Machines, Inc., Special Representatives

ROYERSFORD NEEDLES

DAILY RECORD OF IMPERFECTS DATE _____

OPR. NO.	OPERATOR'S NAME	DOZEN INSPEC.	NO. OF IMPER.	PER CENT	NO. OF SECONDS	PER CENT	IMP. FOUND BY OPR.
1		31	5	0.67	0	0	0
2		33	4	0.50	16	2.02	2
3		22	2	0.37	18	3.40	9
4		30	12	1.66	31	4.30	4
5		30	0	0	15	2.08	16
6		50	25	2.08	0	0	6
7		34	0	0	0	0	12

goods coming through should be maintained. It is very poor practice to allow it to accumulate for a number of days or a whole week or more without being inspected. Such occurrences simply add to the number of imperfects being made. In order to get results, the work which is knit one day should be looped the next and inspected on the third day. The record should be in the hands of the knitting room foreman on the fourth or fifth day. I do not mean to imply that every single dozen must go through to the inspection room in record time. Certain kinds of goods are often given preference for various reasons. However, the bulk of goods must come through like clockwork.

Continuous changing from one style to another is a common occurrence in knitting rooms nowadays, and the sooner the records can be posted in the knitting room, the better the chances for stopping unnecessary and avoidable imperfections. A stale record is about as welcome to the knitting room foreman as the good husband who came limping in two hours late for a well cooked dinner with an out-of-town friend in tow.

A well trained instructor, one who understands knitting and human nature, should be constantly on the job among the knitters. The head of the inspection department should immediately call the knitting room foreman's attention to any abnormal cases of imperfects, say when they exceed two or three per cent where as a rule they have been lower. By cooperating closely in this manner, the knitter who suddenly begins to lag can be pulled out of a rut *before* the record is posted, and the amount of imperfects reduced, thus producing mutual benefits.

Each day's abnormal amount of imperfects should be brought back directly to the individual knitter, thus giving the knitter, instructor or fixer an opportunity to see exactly what is wrong and take some definite action promptly.

In order to get full value from the record, the various kinds of imperfections should be classified by the inspection department and shown on the record sheet accordingly. Note the sample record sheet shown at the top of this page.

For all transferred numbers, all defects found in the transfer line are classified as imperfects, all other imperfections (usually caused by machine trouble) such as bad plaiting, rough needles, holes of any kind, missing or irregular splice yarns, etc., are all classed as seconds. All other imperfects found and turned in by the operator are shown as imperfects found by the knitter on the record sheet. These odd socks are tied up and ticketed with a special ticket, then attached to the bundle of good work which has the regular work ticket, and the complete unit is taken to the production clerk for credit, full price for good work and a fractional price for the imperfects found. This method of handling imperfects prevents accumulations of bad work in the knitting room or elsewhere, and it also permits keeping goods which can be mended and passed for good work with the regular bundle of work right on through all departments.

Some mills maintain that it is wrong to pay the operator for imperfects found, others claim that necessary allowances for imperfects found by the operator have been included in the piece rates. Surely there must be some incentive for the operator, and where the operators are not at fault it takes just as much of their time and effort to make seconds as it does for perfects. The purpose of the record sheet which I have attempted to describe is not to show the daily *production* of perfect or imperfect work per operator, but rather to give some *facts* as to the *efficiency* of each operator. A record of the number of dozens knit by each operator can easily be secured from the production clerk's daily record on which all dozens are shown by style and size daily. Every mill must keep a record of this kind in some form or another.

During many years of close contact with knitters, I have yet to find one who intentionally made bad work, but I have seen many who, having made imperfects through carelessness or ignorance, would intentionally put them in good work hoping that they would not be found by the inspectors. It doesn't take long to find out operators like that; they are usually looking for a job. Any operator with a grain of pride will prefer a good record to a bad one. It means a bigger pay check and the assurance of a steady job.

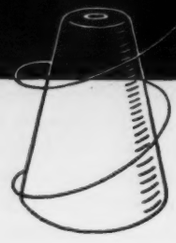
By watching the record sheets closely, the operator,

To meet your individual problems

FANCY TWISTS

developed

in Aberfoyle Durene Yarns



WE ARE prepared to offer unusual multiple and combination twists to meet your yarn needs, whether for knitting, weaving, or braiding. Or our technicians will develop for you fancy twists in special yarns for the popular knitted or woven outerwear or underwear fabrics.

Whatever your yarn need . . . fancy twist, unusual elasticity, greater softness, more complete and level dye absorption . . . the use of Aberfoyle Durene Yarn gives the manufacturer security, and complete satisfaction. It is your assurance of a quality product.

aberfoyle

MANUFACTURING COMPANY

123 SOUTH BROAD STREET, PHILADELPHIA, PA.

REPRESENTATIVES IN LEADING TEXTILE CENTERS THROUGHOUT THE WORLD

instructor, fixer and foreman can tell at a glance just what is being done. The Imperfect column next to the Number of Dozens tells whether the operator is careless in topping and transferring, imperfections caused by the machines are included, the figures tell the operator: Go to your machines and look for transfer trouble.

The next column showing Seconds tells the operator: Look for machine trouble, holes, bad needles and the like.

The third column keeps the operator posted from day to day as to the number of imperfects being found. It says: Your record is good, fair or bad.

The total of these columns tells the boss plenty. A good operator can as a rule keep the first column up to par. The next two columns require plenty of assistance from the fixer. Sad, but true, many fixers look upon a record sheet as something which concerns only the boss and the knitter, and assumes that as long as the knitter doesn't raise the devil everything is going along beautifully. In many cases fixers work hard on their machines when they could get better results working on their knitters. Many knitters feel that all their bad work is caused entirely by their machines, and think that their fixer could make them turn out more perfect work if he wanted to and that he simply doesn't give a darn or he's too lazy. It is an every day occurrence to hear a knitter say, "I have the worst set of machines in the mill. If my machines would only run like So-and-so's, I mean I'd turn out some work."

Check up on squawkers of this kind, and you will invariably find them dead from the neck up. A good machine fixer will make it his business to watch the record sheet daily and get all of the information from it that he can possibly get, and then do something about imperfects.

Mr. Fixer, if your knitter is not hitting the ball, call on the boss before he sends for both of you. Remember that you are going somewhere, and that how far you go and how soon you get there depends a great deal on you. And finally, Mr. Boss, get your feet off of the desk, take your record sheets and see what you can do to help your knitters, fixers and yourself. If you don't, the big boss will help you—out.

ARNOLD L. TURNER.

1935 Spring Silk Card

Sixty new shades are portrayed in the new card, which emphasizes two special color collections . .

The regular edition of the 1935 Spring Silk Card, portraying sixty new shades, has just been issued to members of the Textile Color Card Association, according to an announcement by Margaret Hayden Horke, managing director. Highlighted in the card are two special color collections, captioned "The Regency Pastels" and "Peasant Colors." Ever since the introduction of these new themes in the Association's confidential advance silk card for Spring 1935, they have proved a strong fashion stimulus to the textile trades and many related style industries are likewise keying their Spring colors to these smart motifs.

Testing Dyestuffs in the Laboratory

(We have received the following inquiry with regard to the article on dyehouse laboratories by Noel D. White, and published in a previous issue.

"Editor COTTON: *After reading Mr. N. D. White's article in the October issue regarding dyehouse laboratories, we should like to ask him if he makes all his laboratory tests of dyestuffs by weighing the dyestuffs in powder form, or does he convert them to solutions for pipette measurement? Our experience has been that solutions lose their strength, and some colors do not stay in suspension as well as others, so we weigh dyestuffs in powder form. However, we should appreciate his reaction to this."*

This inquiry was submitted to Mr. White, and his reply is published below as of interest to other readers.—THE EDITOR.)

EDITOR COTTON:

Replying to the question of your correspondent, I should like to supplement my article, "Is a Laboratory a Necessity in a Hosiery Dyehouse?" appearing in a previous issue of COTTON, with a few paragraphs on testing dyestuffs.

The testing of dyestuffs in the dyehouse is done to check up on the qualifications claimed for them by their manufacturer. New dyestuffs that are submitted for trials are tested—

First: For color. To see the correct shade that can be obtained with regard to condition, method and material in the mill. We never take for granted dyed swatches that may be submitted by the dye makers themselves. No matter how reliable they may be we want to find out ourselves with our several methods of processing.

Second: We test them to find out how they behave in relation to different fibers. Some dyes are represented to leave some fiber undyed, and we want to know if it really does that under all conditions. For instance, if a direct dye is supposed to dye the cotton and leave the silk and wool white it may do so in soap or alkaline bath, but when used in a neutral or acid bath it may not leave the animal fibers as white and we must know to what extent these fibers are colored with this dyestuff under different processes and temperature of the bath.

Third: We want to find out the rate of absorption at different degrees of temperature. A dye that is absorbed at a rapid rate at a given temperature may be slow to go on at a higher or lower degree and for some materials that must be taken into consideration in order to group dyestuffs of the same or nearly the same rate of absorption for consistent results. In dyeing hosiery, dyestuffs that are exhausted too rapidly are not the best for good, even dyeing.

Fourth: Dyestuffs are tested for their tinctorial strength. In buying dyestuffs the price paid is not always a guide for economy. Dyes may be so manipulated that it is possible to buy one that gives good results at a certain percentage, but the price may look too high compared with a similar product that is sold at one-third cheaper in price. A test may disclose the

fact that it takes twice the amount of the latter, cheaper dye, to obtain the same depth of shade given by the former. Dye stuffs are supposed to be sold on merit. But to the cost of manufacturing it must be added the expense that the dye makers have to shoulder in maintaining demonstrators and laboratory experts, sometimes having to keep them for weeks, free of charge, in some dyehouse in order to teach incompetent dyers how to use their dyes, thus raising the overhead cost of dyestuffs. It is very evident that the added cost must be paid by somebody using dyestuffs. Here is where the dyehouse laboratory may pay in finding the true value and refusing to pay any more than what the dyestuff is really worth or buy the competing, equally good dye offered by a rival concern.

Fifth: We test for fastness, and these tests are varied according to what the material to be dyed is supposed to stand for. In hosiery, washing tests are most essential. Dyed hosiery has to stand several soap washings. As we do not know what the customer may use in washing her stockings we test our dyeing by washing about a dozen times in a moderately strong Ivory soap suds, at a temperature as high as the bare hand will stand, and watch the result. For dress goods the light and weather test is used, besides the washing test. A swatch, after being washed in soap suds, is exposed to the sun and weather by nailing it on a beam outside of the building or on the roof. One half of the swatch is wrapped in several thicknesses of yellow paper, leaving the other half hanging loose for exposure for two or three weeks. Then comparisons are made and results are noted. We have found that results obtained from a Fade-Ometer are not always conclusive, and that tests made with it and those made under the weather exposure do not always check alike. For quick results, the Fade-Ometer may answer the purpose, but when time permits, the other method is resorted to.

Then there are dyeings to be tested for bleeding into other materials, souring, fulling, cross-dyeing, etc., that would take more time to enumerate than the editor would allow me. For the purpose of my answer to this correspondent, the foregoing should be sufficient.

In making the test for color, we usually dye three swatches, or more. If it is a dye to be used for dark shades we make a test with one per cent, one with five and another with ten per cent. In this case the dye is weighed out and the dye powder is put into the beaker as it is. If the dye is for light and medium shades, in order to get better, more accurate returns, we take one gram of the dyestuff and dissolve it in 1,000 cc (cubic centimeter) equal to one litre of boiling water, which when thoroughly dissolved will give one mg. (milligram) of dyestuff for every cc of the solution. Out of this solution we measure with a pipette as many cc as we want to make our tests with. We make several tests with different quantities. Our regular standard tests in this case are made with 5 cc, 25 cc, 100 cc on swatches weighing 25 grams which we keep properly tagged for reference and guide for making new shades and matching when needed. It will be easily seen that if we should weigh 5 mg of dyestuffs that weighing would be extremely hard to do correctly without a very sensitive balance, which is seldom found in the ordinary dyehouse.

Testing for the second reason given—to determine how they behave on different fibers—is usually done with a high percentage of dyestuff because a small amount of dye may not stain a fiber of a different nature, but if used in the same percentage as that needed for black, navy or brown it should stain, it would be quite perceptible. In this case the dyes are weighed and dissolved right into the beaker.

When testing for the third reason—rate of absorption at different temperatures, we always proceed as in the first case, and usually, in this case, the test goes on, watch-in-hand, in order to note the rate of absorption and how long it takes the swatch to exhaust the bath and obtain the maximum depth of color.

In the fourth case—testing for tinctorial strength —we find that the best way is to test the old dye in one pot and the dye to be tested in another pot, using swatches of the same materials and weight in each pot, and giving both tests the same treatment as to time, chemicals and temperature, and then comparing the results. We keep the standard dye tests in dark closets, but many of these tests, we find, when compared with fresh ones, are faded with age. Here again it is immaterial whether the dyes are weighed and used dry, or whether they are dissolved and measured with a pipette. It is obvious that the main reason for using a pipette for measuring dyestuffs to be tested, or to make new shades, is to obtain more accurate results than could be obtained when using small quantities and when the reliability of a none too sensible balance is questionable.

The tinctorial strength of a dye is also tested to determine the maximum amount that can be used for a dark shade without wasting it. Some dyes will yield their limit of depth with five per cent or even less. Any amount above that limit will not only be wasted, but will be positively harmful, for it will cover the fiber, accumulate loosely on the surface and prevent other dyes from doing their work effectively; the penetration is impaired, the shade loses its brilliance, the matching is rendered difficult and crocking is invariably the result of the wasteful use of dyestuffs.

This correspondent stated that, "solutions lose their strength and some colors do not stay in suspension as well as others". We have found that some dyes, when kept in solution only a short time before using, do not come up to expectation. The worst offender in this respect, for example, was found to be Neutral Gray G. When first dissolved in boiling water it always worked, but when additions were needed, it invariably refused to work with its original strength and was very difficult to calculate and control. At first we decided, when the quantity necessary was too small to be weighed and used dry, to make a fresh solution every time an addition was needed, but finally we found that by keeping the solution in boiling water, that is, putting the bottle containing the dye solution in a pot of boil-

ing water, it could be kept with its starting strength, at least until the shade required was obtained.

In matching samples in the beaker a swatch of the material is weighed, and when it is dyed, the amount of each dye used is carefully noted, the figures being converted, by proportion and being used when dyeing a lot of goods in the dyehouse. The metric system is invariably used in the laboratory, and an easy way to find the percentage for a practical dyeing formula is given herewith: The sample to be dyed is weighed. Supposing the swatch weighs 10 grams, then one gram of each dye needed is weighed and dissolved in one liter of boiling water. In making up the dye bath each dye is measured into the bath in cc through a pipette. As each cc of solution contains .01 per cent of dyestuff, when we find out how many cc of each dye has been used, we have the correct percentages to be used on the lot. As many dyehouses use grains, ounces and pounds scales, the percentages may have to be converted into these weights. All dyestuff concerns furnish conversion tables to facilitate the work of their customers and will gladly furnish them upon request.

NOEL D. WHITE.

More About the Pitch of Narrowing Machines.

EDITOR COTTON:

Reading over a back issue, in "KNITTING KINKS" I came across an inquiry from "CONTRIBUTOR No. 5073" relative to the pitch of a narrowing machine, and the difficulty in his understanding of gauges used in making adjustments with them. For the purpose of helping to clear his question and not for the sake of appearing adversely critical, it is rather difficult for me to see where he gets his idea of pitch and the terms he uses to define the idea.

Let us first take his remarks on the position or "pitch" of the narrowing machine in both positions as he seems to have it, "two degrees off of vertical when at rest, and six degrees off of vertical when at the lowest stroke, or the bottom."

Positions of the parts of a narrowing machine are not referred to in "degrees from the perpendicular" outside of the drafting room and engineering departments of the full-fashioned machine builidng plant, and are usually referred to on the blueprints in fractions of an inch or in decimal equivalents on the Reading machine and the English built frames, and in metric measurements on the German built machines, and could not be practically applied to the adjusting of the narrowing machine when it is completed on the finished frame.

But, using his terms, "two degrees off of vertical when at rest and six degrees off of vertical when at the lowest stroke, or the bottom," would necessitate the application to the narrowing machine of a motion that has never been applied or found necessary for its working. The lines in Fig. 1 will illustrate the positions of the narrowing points relative to the needles. *A*—*A* represents the position of the narrowing point; *B*—*B* the needle. (1) is the relative positions at rest; and (2) the relative positions just before the needles press to the points.

Now let us suppose the narrowing machine to be equipped with a motion that would accomplish the feat of placing the relative positions with a difference such as he mentions. Then we would have ap-

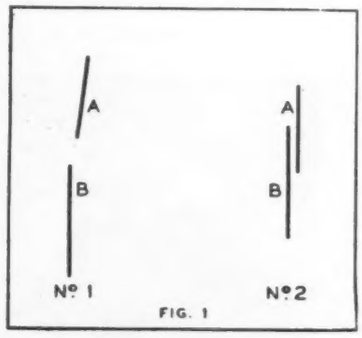


FIG. 1

proximately what is shown in Fig. 2. With the points in the "pitch" shown at (2) in Fig. 2, proper narrowing would be impossible, and in view of the fact that the movement downward from the "at rest" position to the lowest position preparatory to the transfer of the loop is only one inch, the pitch at rest must not be very pronounced, so that the theory of the idea seems to be impractical.

The erectors of full-fashioned frames, especially the finishers, are equipped with standard gauges, of

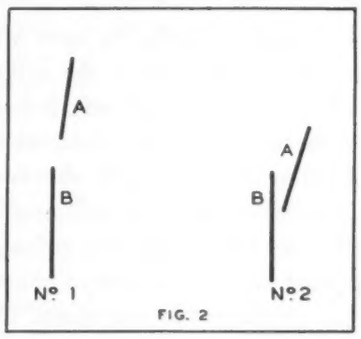


FIG. 2

which there are two, for the setting of the narrowing machine after erection, and when finishing the machines these standard gauges are insisted upon by the manufacturers of the different types of frames. With these two gauges especially I have not experienced any marks of variation on them. It is customary on the part of some fixers in care of a number of machines making a variety of goods that call for changes from the normal in the types of work being made on the machines, but this is fairly obvious, due to the delicacy of adjustments, the standard setting is always plainly marked on the gauge no matter how many variations there may be from the erector's standard. I make this remark in passing, but personally I have never seen any narrowing machine gauges with more than the standard mark. This is not so true with reference to some of the cam gauges, where more variables are used.

Permanence . . .

"Men pass away, but the principles of Honor, Quality, Strength and Service ever lead the world of business forward; they make for progress, permanence and success."

(From the book "Standards of Business" by Elwood E. Rice, LL.D.)

DOWN the ages, from the very dawn of commerce, have come the principles of Honor, Quality, Strength and Service.

The passing centuries have wrought tremendous changes in the science of production and in methods. But still you find these four basic principles known, respected and practiced, wherever men of character deal, one with another. In truth they are the guiding principles of progress and permanence; changeless, fixed, eternal—"as the stars!"

In your business dealings during the past ten years you no doubt know that some concerns are like "fixed stars," while others have risen rapidly only to disappear in a comparatively short time.

It is such experiences that caused buyers to realize how much safer, more satisfactory and economical it is to deal with sound substantial manufacturers, who have a proved record for standing back of their products and promises at all times.

Our faithful adherence to these high standards in every department of this business protects all who buy "B&C" cotton and mercerized yarns.

BOGER & CRAWFORD

Philadelphia

Chattanooga, Tenn. Lincolnton, N. C. Chicago, Ill.

In Fig. 3 are two sketches of the gauges used in checking positions and making adjustments of the narrowing, these with the height gauge constitute all that is needed. No. 1 is the type of gauge used for setting the distance between the main or back shaft and the smaller top shaft on the front part of the narrowing machine, from which are suspended the brack-

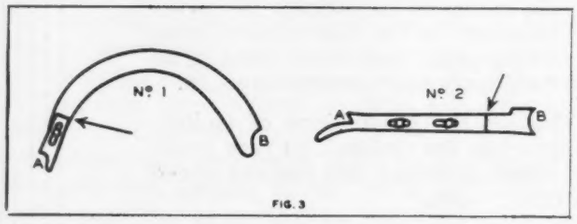


FIG. 3

ets that form the supports and bearings for the sliding rods, the approximate space used between these two shafts is 12 inches, *A* to *B*. No. 2 is the type of gauge used for setting the bottom sliding rod the proper distance from the main or back shaft of the narrowing machine; this space is approximately 10 inches, *A* to *B*.

There are some differences in these measurements for the different types of frames and we are only giving these measurements in general terms. The most practical thing a fixer can do when a machine is finished is to check his gauge with the gauge of the erector and scratch-mark it deeply where the joints are indicated, by the arrows in the sketch, and, as is sometimes the case, the differences between the footers and leggers should be kept separate by having separate gauges, carefully marked.

For the purpose of making adjustments that are in any direction from the standard setting that exists at the time of finishing the machine, made necessary at times because of changes from the normal in the type of work being made, the narrowing machine must

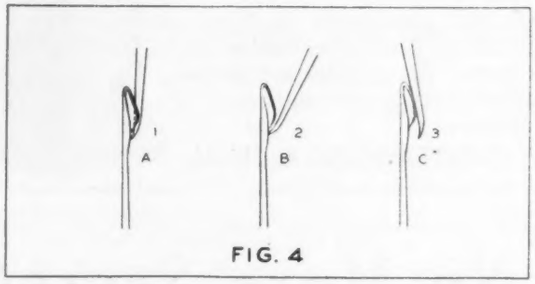


FIG. 4

never be moved for adjustment by any rule-of-thumb or guesswork. In this connection the exaggerated sketch in Fig. 4 may suggest what carelessness in this connection may lead to.

Now, as "pitch" is the real subject matter of the inquiry, these exaggerations may serve to make the simplest application. As *B* is an exaggerated example of too much forward pitch, *C* is an exaggerated example of too much backward pitch. *B* may take the loop from the needle, but the loop will be broken in passing to its proper place on the point. *C* cannot take the loop at all, but will in all probability cause the needle to drop the stitch, while *A*, in contradistinction to the other positions or pitches, will undoubtedly both take the loop on the first downward dip of the points, and deliver it properly on the second downward dip of the points. The sketches illustrate the idea of incorrect pitch, and a great deal of narrowing difficulty may be corrected or avoided by a proper application of the principle involved in that term "pitch".

For one or two suggestions for the making of adjustments, let us now refer to our sketch of Gauge No. 1, Fig. 3, used for setting the top shaft of the narrowing machine. This setting, by the way, having no effect on the pitch of the points. To make a forward adjustment of the whole narrowing machine, that is, bring it out toward the operator, first open the large bolt on the front end of the main narrowing arm, set the gauge in position between the back shaft and front shaft, pull the narrowing machine carefully forward, insert a divider between the top shaft and point *A* on the gauge, force the narrowing machine back against point *A* and lock it in position. Having made this adjustment secure on one of the arms, now loosen the slide lock screws on the slip piece of the gauge and set the gauge to the new adjustment, and the whole machine can then be set to the same position without resorting to the use of the divider as an additional spacer. The fixer knows positively how much he has moved the machine forward, and by carefully noting the change and filing for future reference, can very quickly change back or make further adjustments without having to try and remember just what he did do after a few days or weeks have elapsed. Do everything possible to eliminate any hazard in positively knowing what was done the last time a change was made, and what the change was made for. A card filing system of this sort can be built up that will be of inestimable value as the days go by, one card to each machine, and the more machines a man has, the more valuable it will prove to be.

To make a backward adjustment of the same member, reverse the process by loosening the slip piece of the gauge first, place it in position between the two shafts, insert a divider and move up the slip piece to the divider. Lock the slip piece of the gauge in this position and then proceed to set the top of the narrowing machine back to the gauge all along the machine. Do not at any time handle the gauges roughly, and remove the gauge from position always while moving the parts being adjusted, otherwise you may bump and change the set of the gauge and on the check-over find time wasted.

Locks, bolts and bars cannot halt the universe, and nuts, bolts and screws cannot keep the pitch of a narrowing machine in a positive position forever. Too speedy narrowing, the lifting device carelessly operated, letting the narrowing fall with a jar that shakes even concrete floors, bumps from the front and jolts from the back, knitters with small pocket wrenches and itching fingers who rush where angels fear to tread—these are a few of the hazards against the holding of positive pitch. And where the narrowing machine is most used, on the footer, is where most of these bad bumps occur, and where over-wise knitters

QUITEX
SPUN RAYON

Textile mill men who are taking the pains to investigate the practicability of the new Quitex Spun Rayon are finding profit and satisfaction in its fashionable dull lustre and unusual strength.

To those who see the possibilities of Quitex, and who appreciate the Quissett 20 year tradition of fine cotton spinning, are assured added impetus to fabric sales.

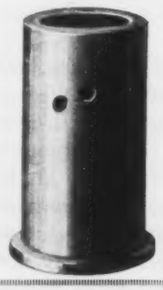
It will be worth your time to write for samples of Quitex Spun Rayon.

Quissett Mill
New Bedford, Mass.

Wm. H. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY

MOCCASIN BRONZE BEARINGS
for Scott & Williams Model K Machines

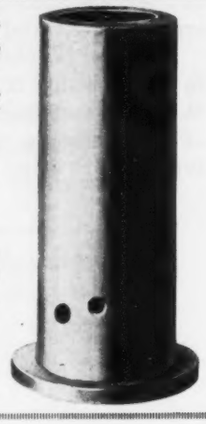


Here are bearings built to match the engineering skill and precision construction of the famous Scott & Williams Model K Machines. MOCCASIN Bronze Bearings relieve the knitter of bearing worries, so important under the quality production demands of the present day.

Our stocks on hand enable us to make prompt shipments. Let us quote you prices.

. . .

We also manufacture the famous Moccasin Oil Distributing Bushing and a complete line of brass and bronze bearings, bushings and castings.



Write for Descriptive Literature

MOCCASIN BUSHING COMPANY, CHATTANOOGA, TENN.

NOW

FIDELITY MACHINE COMPANY-PHILADELPHIA-PA.

IS THE TIME TO LET US TELL YOU ABOUT THE MOST MODERN BRAIDING MACHINES AVAILABLE FOR MAKING SHOE LACES, WICKS, FOR CANDLES, NARROW TAPES, FISH LINES, ROUND AND FLAT ELASTIC BRAIDS, TUBE COVERINGS, PACKINGS.

No More Secrets

The Audit Bureau of Circulations was formed by large advertisers and publishers to put a ban on circulation secrets. Publications willing to have their records checked by impartial auditors belong to the Bureau, and the number of papers they sell is published to the world. No one doubts the "A. B. C." report. It eliminates unknown quantities.

COTTON

ATLANTA, GEORGIA

are more frequently found. Against all of these the fixer has only his common sense assisted by the gauge No. 2, in Fig. 3. When I walk into a shop and see that important gauge kicking around the floor or thrown in among a half-hundred wrenches and the like, I am tempted to lift it high and let it drop with cracking force on the numb-skull who needs it so much in his business and appreciates it so little. For narrowing trouble can cut disastrously into production and raise Halifax with dispositions otherwise normal. I particularly call to mind an old fixer who picked up his gauge, walked to a footer, tried the feel of his gauge, found it fitted too tight, moved the narrowing pitch forward so that the feel of the gauge was normal, put the machine through a narrowing, almost lost his eyesight at the smash that resulted, looked over the gauge that he had dropped on the floor, and, to his surprise, found a sizeable burr on the center of the section marked *B* in the sketch, that stood out like a wart and threw his narrowing machine out a corresponding amount. That's what throwing a gauge around will do. He had dropped his gauge where it struck something sharp enough to cut the edge and raised the burr in the worst place.

In making a study for the purpose of changing the pitch of the narrowing machine, the first step is to ascertain the position of the top shaft, correct any fault in its position and check it carefully, so that you are sure that the position of the top of the narrowing machine is correct. Bear in mind that moving the bottom of the narrowing machine forward or back even the thickness of a divider of the same gauge as the machine makes a lot of difference in the relationship existing between the needles and the points of the narrowing points; because the extreme point of the narrowing points move farther than the change in the gauge due to the radius involved, for, whether we swing the machine forward or back, we apply the gauge to the slide rod and not to the extremity of the points. See Fig. 5.

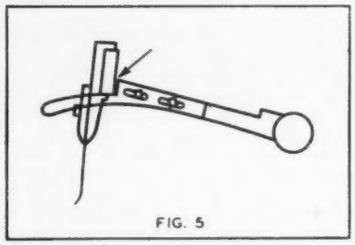


FIG. 5

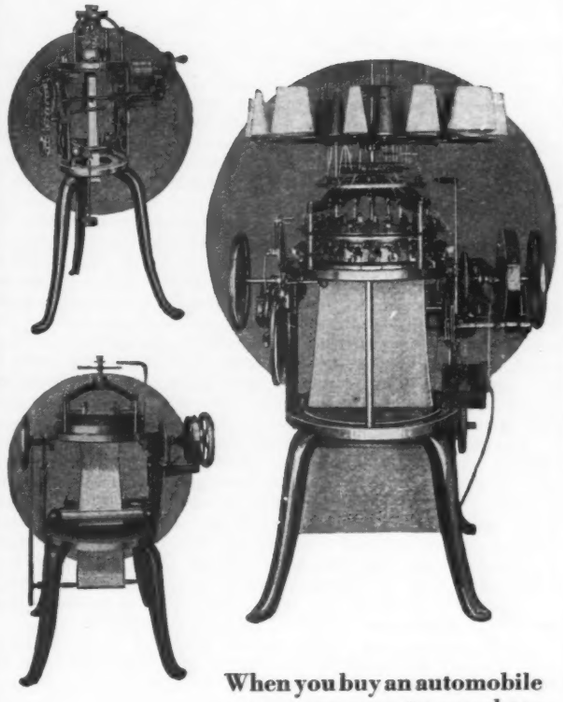
A divider inserted at the point indicated by the arrow, due to the radius made by the length of the supporting bracket from the front narrowing shaft, will cause the extremity of the point to move more than the thickness of the divider. This should be remembered as important, affecting as it does the application of the points to the needle beards.

Proceeding in the same manner as in changing the position of the whole narrowing machine by re-setting the gauge No. 1, use a divider for the purpose of surety as to the amount of change made in the pitch; a thickness gauge will of course serve the same purpose, should a smaller change than the thickness of a divider be required.

As important as any suggestions made herein is this: do not fail to file a record of the adjustment. It insures a safe return to the original position or pitch.

CONTRIBUTOR No 5082.

MODERNIZE *your* PLANT *with* BRINTONS



Ribbers of every type.

Jersey Machines Plain and Fancy Stitches.

Rib Body Machines For Underwear and Bathing Suits.

Sweater Machines Rib and Jersey Types.

Special Knitting Machines From ¼ inch to 36 inches.

When you buy an automobile —you are sure to purchase a car with a proud performance record. Why not apply the same excellent logic when you equip your mill with knitting machines? The name Brinton stands as high in its field, as Rolls-Royce, Packard, and Cadillac in the automotive industry.

Depend on Brintons

H. BRINTON COMPANY

3700 Kensington Ave., Phila.

New York Office: 366 Broadway

BRINTON — CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

THE KNIT GOODS MARKETS . .

THE hosiery primary markets wavered for perhaps a week or ten days after it appeared that demand for the holdings had been sated. Some interests looked for a tapering of more nearly normal, and proceeded to operate plants on a more conservative basis. Buyers for some of the larger retailing establishments let their professed opinion trickle through the columns of trade publications that prices had been advanced too quickly and too radically. All hands seemed to feel that an average of 25 cents a dozen increase was warranted, but some balked at paying 50 cents more than the December peak. Some few mill heads expressed themselves to like effect. By the middle of January these same executives thought otherwise and were predicting still further advances instead of any scaling of the half-dollar increase that had gone into effect and was being paid, in instances.

Hosiery Markets Still Experiencing Activity

The hosiery primary markets in January appeared to have had lost none of the momentum gathered during the last quarter of 1934. Statistics were ignored as the month wore on and demand for given types of women's silk full-fashioned hosiery became so acute that an organization of manufacturers was asked by buyers to assist in locating hosiery in the gray. During the December pressure for deliveries seven-thread silks were in especially strong demand. It seemed the market was bare of this type of stocking with cotten top and foot. There had been no relaxation of interest in hosiery for the lowest possible price brackets, as was emphasized in frequent inquiries for the conventional. Orders for 5,000 to 6,000 dozens were offered early in January for the low price stockings, and some of the buyers for retail stores sought to help a price-breaking movement along by fepresenting "we are not so busy now and can afford to wait."

Bucking prices could not long prevail successfully against effective demand such as was asserted in the early part of January, when a large distributor offered orders aggregating 25,000 to 42,000 dozens of 42-gauge of conventional construction, in the gray. This was perhaps the more weighty order offered through the Full-fashioned Hosiery Association, Inc., on behalf of one of the six largest full-fashioned mills in Pennsylvania. This seems equivalent to saying the hosiery was being sought by a manufacturer distributing, at least in part, to retailers direct.

There are a few mills in the northern centers which have dyeing facilities far in excess of their maximum capacity for producing hosiery, and these recently have been scouring the full-fashioned mills for gray goods. The owners would rather buy unfinished hosiery than expand their plants as a means of reducing dyeing department overhead. On the other hand, manufacturers lacking in dyeing facilities on a basis of hosiery plant capacity seem inclined to sell in the gray rather than add to their dyeing establishments. This attitude on the part of the two groups of mills has a wholesome effect, in checking the establishing of new mills and over-expansion of existing plants when demand for hosiery is sufficient to give sellers the saddle for a time.

It transpired on inquiry among buyers having lines out for assured delivery of hosiery that they were influenced, mostly, by a fear of a dearth of most wanted numbers for spring, as there was at times last Fall for the holiday retail trade. This fear could be traced in part to experiences in the past few months and a knowledge of probable maximum production, with no material additions to machinery in place. Manufacturers entered upon their Fall campaign facing light stocks. Replenishment during the last several months of 1934 seems to have been absorbed during the holiday shopping. Thus, it appears, approximately the same situation as to stocks in mills and stores existed at the start of this year as at the finish of last year.

Demand for Hosiery Reflects the Statistics

The January demand for hosiery reflected conditions as they were represented in the statistical report of the Department of Commerce compiled from reports of 322 identical establishments, representing 379 mills, for November, 1934 and 1933, when there was shown a more nearly balanced situation than had existed for many months, the scales tipping in favor of the mills. Comparing last November with the corresponding month of 1933, production of hosiery, all classes, was increased to 5,839,638 dozens from 4,836,456 dozens, or approximately 20 per cent. Compared with this showing, there was an increase of 66 per cent in orders booked and 30 per cent in net shipments. Unfilled orders at the commencement of December showed an increase of 43 per cent, and the rise in stocks in mills was about normal, at approximately 10 per cent.

In the matter of the various classes of hosiery covered in the reports for the two Novembers, other details were in line with the percentages given as to the whole, except as to unfilled orders for women's full-fashioned, in which there was a gain of almost 80 per cent. It was in women's full-fashioned that demand was especially pronounced in December and again in January. Unfilled orders for juvenile hosiery, classified as boys', misses' and children's, at the commencement of December made the second best showing, the increase amounting to 54 per cent over the corresponding date of 1933.

As demand in January was asserted before the statistics of the Department of Commerce reached the trade, it must have been an expression of the buying in expectation of a possible dearth of goods for spring, in which the preparation for the shopping period doubtless was a factor. Dealers, it appeared, were guarding early against a repetition of the tight situation which preceded the holiday support in consumer buying.

Cancellations in November were greater in number of dozens than in October, but were around 20 per cent less in November this year than in the 1933 November, as indicated in Department of Commerce statistics, and in December it was stated by some of the more important selling agents and distributors to retailers that cancellations were lighter than for the corresponding period in any recent year.

Use of Silk-Rayon and Rayon-Cotton Combinations Fluctuate

Somewhat sensational fluctuations are noted in the use of silk-rayon and rayon-cotton combinations for hosiery, as reported by identical manufacturers for November 1934 and the corresponding month of 1933. The increase of cotton and rayon in combination last November amounted to slightly more than 42 per cent. The principal increases were in men's half-hose, 85 per cent, and women's seamless, approximately 76 per cent. There was a decrease of more than 50 per cent in the use of this combination for women's full-fashioned and a substantial decrease as to juvenile hosiery. Men's half-hose in silk and rayon combination seems to have gained in popularity, the increase for November last as compared with the preceding November, being around 60 per cent. This combination increased in no other class of hosiery with the exception of juvenile and infants', in which the gain was insignificant.

The market was pretty well cleared of underpriced half-hose during the recent holiday shopping period, when promotion sales, for which radical reductions were made, attracted more women buyers than men, the latter apparently leaving it to the female members of the family to be the judges of desirable color combinations.

While it is generally presumed in the trade that the manufacturers of infants' socks are better organized for maintaining a market equilibrium in fat and lean periods, it seems that in quite recent weeks this division did not fare so well in the matter of manufacturer distribution for spring. All cotton lines showed a comfortable gain in the last quarter of 1934 over the corresponding period of 1933. This probably may be attributed to the fact so many dealers are still buying for price.

Survey Shows 64% of Seamless Hosiery Equipment is in South

Sixty-four per cent of all of the seamless hosiery equipment in American mills is in the South, it is stated in a survey of the seamless industry, the first of its kind, by Dr. George W. Taylor, of the industrial research depart-

ment of the University of Pennsylvania. His book, "Knitting Equipment of the Seamless Hosiery Industry," was issued about the middle of January. His conclusions are based on data obtained as of January 1, 1934. The industry, it is stated in a resume of the statistics, has annual potential production of 132,000,000 dozens of hosiery, but has been turning off but around 75,000,000 dozens.

Since the information for the survey was gotten ready for compilation, there has been sonsiderable installation in southern mills, of used equipment obtained from mills in the North.

The report of the survey shows there were 129,500 machines accounted for, of which 14,546 were auxiliary ribbers. In the men's half-hose seamless division the survey report places 38 per cent of the equipment, 24 per cent being accounted for in the women's division.

Dr. Taylor, it will be recalled, was the author of a number of reports on the full-fashioned industry. He is a member of the Hosiery Code Authority and of the Philadelphia Regional Labor Board.

"Inner" and "Outer" Ringless Groups Still Wrangling

The inner patent group, in other words, the Textile Patents Corporation, controlling the rights on the Kaufman invention for producing hosiery with the carrier attachment, has broken with the outer group, headed by, among others, the Gotham Silk Hosiery Co., Inc., Nolde & Horst, Inc., and Chas. Chipman Sons Co. What developed in the outer group was exception to the terms of the contract as originally drafted by the Textile Patents Corp. Many conferences have been held between the two groups over a period of almost a year, in efforts to smooth out the wrinkles and enable the full-fashioned hosiery industry to present a solid front in the promotion of the manufacture and sale of what is commonly referred to as ringless hosiery.

The outer group objected to classification of chain stores as retailers, and the manner in which it was proposed to maintain fixed prices for given types of three-carrier system hosiery. Counsel for individual manufacturers and for the Textile Patents Corp. are said to have advised that the price-fixing provision presents all the rigidity that would be safe from possible conflict with Federal laws in relation to conspiracy.

During the long drawn out controversy over the form of contract for licensees, it appears that quite a few manufacturers engaged in the production and distribution of ringless hosiery by processes not conforming to the use of the three-carrier system, and that these stockings were sold in a number of retail stores. Ex-Judge Hugh M. Morris, the Patents Corp. attorney conducting litigation, was said to be preparing suits to be filed against a group of retailers and a group of manufacturers, alleging infringement of the Kaufman patent.

In announcing its ultimatum, the Textile Patents Corp. says that the agreement as finally adopted and now in force was based upon suggestions, criticisms and information obtained through negotiations with over twenty-five outstanding law firms representing conflicting interests, and that the contract will not be changed, under any conditions. It is explained that delay in the prosecution of infringement suits was due to the desire of the Textile Patents Corp. to first procure the co-operation of leading mills in obtaining the desired trade objectives.

Feels Industry Muffed Opportunity in Handling of Ringless Situation

The full-fashioned hosiery industry is believed by some of the more actively engaged in manufacturing to have lost an opportunity of a life-time in neglecting to fully co-operate in plans for merchandising so-called ringless hosiery, or, to put it otherwise, the production of the three-carrier device. It is regarded in the industry quite unfortunate that there should have been a division of sentiment on the subject of royalty.

With the rights under the Kaufman Patent covering the manufacture and use of the three-carrier invention, owned by the Textile Patents Corp., it has been maintained that an opportunity was offered for lifting the full-fashioned industry out of the rut which manufacturers dug for themselves in price competition, resulting in losses for some and thin profits for others. So far as has been ascertained from those who may be presumed to be familiar with the facts, the first rift in the industry over the control of the patent arose from opposition originating in New York to a royalty of 10 cents a dozen, the opponents insisting that 5 cents would be sufficient. It proved to have been an easy matter to spread dissension, and this has resulted in a division of leaders in the full-fashioned industry, some training with the Textile Patents Corp.—the others pulling against it.

Intelligent control of the rights under the patent, it is maintained by an important manufacturer, would have put the marketing of the three-carrier stocking on a basis that would have given it virtual protection against the exploitation of low-priced inferior goods. "Would it not have been better to pay 10 cents a dozen royalty with assurance of profit of 50 cents a dozen on hosiery than to pay 5 cents a dozen royalty and take a profit of only 22 cents a dozen"? is a question that was put up to a dissenter quite recently during discussion of the failure to formulate a marketing program.

It is estimated by manufacturers competent to speak with a fair degree of accuracy that 65 per cent of the full-fashioned industry has been equipped with the three-carrier device. It seems noteworthy that the recent new list of prices issued by the Berkshire Knitting Mills covers eleven numbers, only two of which, seven and ten thread are not of ringless construction.

Some of the manufacturers, following advances in prices that were named in January, expressed the opinion that an increase of 25 cents a dozen was recognized generally among buyers as fully warranted, but that there was likelihood of resistance to an increase of 50 cents a dozen. In fact, some of the important distributors to retailers canvassing the trade in January found such resistance rather well developed, buyers saying they were "not so busy now and could afford to wait."

It was the thought of one of the more important mill executives maintaining close relations with the retail trade that it would have been better had prices been advanced by easy stages; that is, 25 cents at that time and 15 cents or 25 cents additional later. It was feared that any downward revision by manufacturers who had announced increases of 50 cents a dozen would give buyers a pretext for deferring commitments, on the ground of an alleged unsettled market. However, with the Easter shopping period less than eight weeks in the foreground, it is held that manufacturers will have no occasion to offer recessions or accept them in order to get their share of the spring business.

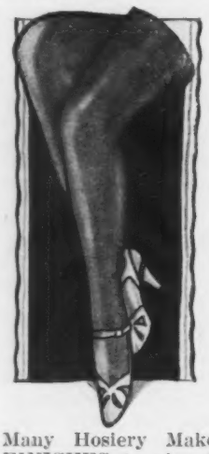
Knee-Lengths Are Increasing in Demand

The knee-length stocking is found to have made such an appeal to buyers that it seems likely a great many mills will be offering it for the coming season and that a surplus of output is not improbable. This type of stocking is conceded to be in the nature of a "prop" for the market, unless there be a repetition of price competition and sales be unprofitable as a result. It is realized that innovations will make greater headway if kept in popular price brackets, and that undue increases will have an adverse effect on the market little less destructive as to volume than competition for business by recourse to price chiseling.

The stocking, it is pointed out, must be given sufficient elasticity at the hem to make garters absolutely unnecessary, properly constructed and properly priced, the knee-high stocking will increase sales of full-fashioned numbers by reason of attracting to it more of the younger element. Its patrons, according to professed observers, will range from the girl of high school age to the woman of any age to which she might be willing to confess. It was recalled that the Phoenix Hosiery Co. and one of two other mills some time ago introduced the stamping of the various lengths of their production on the stocking. With the knee-high type in vogue, it is suggested by buyers, there may be less necessity for stamping stockings with their length.

A New Chevron Stitch Number

Possibly the outstanding innovation in hosiery construction this year is what is described as a Chevron lace stitch number. The Green Lane Hosiery Mill, Green Lane, Pa., is said by the distributors to be the only mill in the United States that is making it. It is a copy of a lisle stocking said to be popular in Germany and is made on a single-unit machine. The heel and toe are of 13-thread silk. Instead of perpendicular wales the Chevron stitch effect, taking the place of wales, (for the purpose of description) converge on the seam at the back of the leg. It is made in five colors, and by reason of the convergence of the lines



These "Brosco" Silk Finishes

"Brosco" Dull Finish
Finishing Compound S. P.
"Brosco" Scroop Oil

Give Stockings that "Extra Smartness"

Many Hosiery Makers are using "BROSCO" SILK FINISHES to give their stockings that "extra smartness"—the "smartness" which comes from CONSISTENTLY PROPER FINISHING.

"Brosco" Silk Finishes are unique because they give "any desired degree" of low Lustre, Water and Spot-Proofing, Softness and Elasticity. "Brosco" Finishes require but "one bath"—and because they are fixed on the Fibre, they will withstand repeated washings.

Ask for details or have one of our practical men call.

Remember, "Brosco" Finishes are the result of 27 years' experience

"Brosco Products"
SCHOLLER BROS. INC.
MFGRS. of TEXTILE SOAPS, SOFTENERS, SULPHONATED OILS & SPECIALTIES
AMBER and WESTMORELAND STS., PHILADELPHIA, PA.
and in ST. CATHARINES, ONTARIO, CANADA
"Brosco" registered in U. S. A. and Canada

AVONDALE MILLS

Sycamore, Ala. — Sylacauga, Ala.

OFFER THE ADVANTAGES OF LARGE FACILITIES — QUICK SERVICE

THEY CAN READILY SUPPLY ANY TWIST, PLY, OR PUT-UP IN CARDED OR DOUBLE CARDED YARNS FOR KNITTING, WEAVING OR INSULATING IN ALL NUMBERS FROM 3's TO 40's.

Selling Agents:

WATERMAN, CURRIER & CO.
INCORPORATED

BOSTON CHARLOTTE NEW YORK
PHILADELPHIA CHATTANOOGA

or wales, it is sometimes referred to in the trade under the description "streamline." As but one mill is making this stocking and the production is not large, the manufacturer is not really in want of orders, the factory being oversold to leading dealers in New York, Philadelphia, Washington and other large cities through Thomas W. Montgomery of Philadelphia and Charles W. Campbell of New York.

The owner of an invention for knitting full-fashioned stockings that positively "cannot run" has shown samples of the stocking to several buyers and to a few of the larger manufacturers. As described by a buyer of long experience, managing the hosiery department for one of the larger department stores, the stocking suggests in appearance a modified type of Swiss rib, the wales being quite pronounced, however. Hosiery interests, professing to have made a technical inspection of the stocking, state with apparent assurance that the invention is not adapted to chiffons, for the reason the fabric would be heavier than would be acceptable in any stocking lighter than service weight. It was suggested that if it were possible to knit an absolutely non-run stocking of present popular construction, in weights as light as two-thread silk, the result would be that a large part of the full-fashioned industry would virtually be put out of business. It has been suggested that the inventor, who is said to feel quite secure in his rights, is interested in selling the invention to manufacturers, who might have a motive for making it non-available.

While some of the manufacturers of below-the-knee-length stockings are stressing the laying-in or knitting-in of Lastex or cut rubber in some form, John M. Botts is reported having considerable success with a below-the-knee full-fashioned stocking without rubber or elastic material. Mr. Botts, who has given the name of "NEEZEES" to his innovation, states that he has overcome the necessity for use of the elastic by a system of widening and narrowing to fit the limb. They are of 3-thread silk, 45- gauge, three-carrier ringless type.

No Increase in Production of Full Fashioned Expected

In view of the probable limited installations of new machinery, there is said to be little likelihood of any undue increase in the potential output of women's silk full-fashioned hosiery. There is said in machine circles to have been a mechanical decrease of 10 per cent in production by reason of installation of the three-carrier device and the point is made that within a year numbers of mills lost about two weeks production due to stoppage while the device was being attached. Furthermore, there has been a decrease in the number of hours, so that, making comparison with pre-code regulations and allowing for reasonable new installations, the full-fashioned industry entered upon 1935 with a presumably reduced potential output. That this is true appears to have been borne out during the last quarter of 1934, when the industry made a new record for production and shipments of capacity output. Not in the history of the industry, it is held by manufacturers, was there witnessed such a rapid transition from a struggling for orders, at any price, to a study of how orders might be accepted and filled and shipments made as specified. There was no excess production at that time, and it is not believed that the last quarter of 1934 established a new record for consumption.

Underwear Has Good Advance Business

Distributors of Underwear seemed in January to have "broken ground" for the usual controversy over a proposed date for formal opening of heavy weights. Some of the wholesalers maintain that distribution of heavies was retarded by climatic conditions, that retailer buying presented an almost complete stoppage. This does not conform to the statements of some of the leading distributors operating in wide and scattered territory, among whom it is stated he retailer bought reasonably early and therefore has not been in the market recently except for filling in assortments. In fact, to the surprise of some jobbers whose views were obtained, the average retailer in the middle and southern states bought more freely than ordinarily, and jobbers themselves had to do some filling in as winter got well under way.

There has been a fair amount of advance business in the summer weight underwear, a great part of it being represented in shorts and athletic shirts. These have served for the time to lessen interst in heavies, in some extent because of the difference in price in favor of the lightweights. With men's heavies dragging at times following the peak of the distribution season, jobbers seem to have become seized with the fear that reductions in prices were to be looked for. This fear was dissipated in some quarters during the low temperatures of January, so that it appears with the then conditions of the market continuing there should be little antagonism to an opening of heavy weight lines during February. As always is the case in the early months of the year, the manufacturers need orders for keeping their plants in at least part-time operation.

Distributors point to the fact that women's light weight underwear is materially lower than a year or two ago, identical numbers being down by 8 to 10 per cent. This is said in the trade to be due, probably, to the fact that a number of cutters-up, who do not knit the fabric, have become competitors of manufacturers who convert from raw cotton to the finished garment. Admitting the presence of an increasing number of cutters-up in cotton lines, as has been the case in relation to rayon, manufacturers profess to see no probability of a lowering in prices for the coming season, unless the markets for raw and semi-finished material undergo reverses.

Cutters-up are said to have taken over a great deal of the rayon business from manufacturers having well equipped plants. There is some resentment against the rayon yarn houses for allegedly abetting the business of the cutters-up, particularly since it is charged that knitters have been selling the rayon fabric at or below cost of production from yarn bought at the market. One result of the present feeling toward the rayon yarn producers is expected to be the withdrawal of some manufacturers from the production of rayon and turning to the promotion of business in women's cotton underwear. Women's cottons for several seasons were a very important factor in the volume of business taken by mills specializing in the better types of cotton undergarments, notably in the tuck-stitch and other innovations.

The Outerwear Situation

Knitted outer wear manufacturers contemplating their spring business in sweaters expect to have their plants in full swing for the latter part of February and, according to reports from department managers from some of the leading stores, a fairly good season is in prospect. The business has developed slowly and some interests were seized with a fear that the demand would be less than that of a year ago. This feeling is not shared by the trade generally, particularly that element engaged in the production of knitted sports outerwear, for which it is believed there will be a better outlet than in the spring of 1934.

Coincidental with the beginning of the production season in sweaters, comes active preparation for launching a bathing suit drive. This has been delayed by the hesitancy of jobbers to make initial commitments. If demand should equal that of the 1934 season, there will be a shortage of bathing suits for June-July deliveries to retailers. This occurred in somewhat recent years, mills being under such pressure in instances that they yielded to the pleadings of dealers for deliveries of a few dozens at a time, as fast as the garments could be completed. New models are expected to inject considerable life into the bathing suit trade preliminary to the outdoor bathing season. Notwithstanding there is an eagerness for early orders, and some resistance to prices, manufacturers generally are rather firmly united against departures from their established lists.

U. S. Testing Co. Opens

Opening of a southern testing house in Breensboro, N. C., was recently announced by the United States Testing Company, Inc., whose main headquarters and plant are in Hoboken, N. J. The new division of the company is located at 255 North Greene Street in Greensboro in the heart of the southern mill section of the country. For the past three years, the company has maintained a sampling station in Greensboro as a service to southern mills but with the growth and expansion of the South as a textile center, the demands have increased to such an extent that the testing company has now established a fully equipped testing house there. The new unit is under the direction of Stanley J. Gillie, southern manager, and is equipped to handle all types of quantity and quality tests on silk, rayon, cotton and wool. Opening of the Greensboro unit marks the addition of another division to those which have been operating for years in Philadelphia, Paterson, Providence, Woonsocket and Chicago.

REVIEW OF THE YARN MARKET

Philadelphia, January 18, 1935.

BUSINESS in cotton yarns as described by commission houses maintaining close relations with important spinners was disappointing. Buying had been on such a conservative scale in December that it was thought there must be an improvement in January for taking care of what was thought to have been created, a vacuum in stocks of goods. Fluctuations in yarn prices since the beginning of the year have been somewhat frequent, but in a narrow range, that is, leaving out of the question quantities of carded and combed yarns for which orders had been offered in competitions.

Quotations are regarded as having held with remarkable firmness considering the competition in which sellers became engaged in efforts to procure some of the sizable orders that were offered, mostly for nearby delivery. Some business was placed for deliveries running through the first quarter of the year, but this was an exception, applying more particularly to those instances in which very favorable prices were obtained by buyers.

Single carded on cones was quoted, generally, during January on the basis of 27 to 28 cents for 10s, the latter figure representing absolute maximum. By the middle of the month the range was narrowed by a half cent, with 27½ maximum and most sellers willing to accept 27 for spot and nearby deliveries. Some of the southern spinners during the fluctuations gave notice of advances which made their minimum price 28 cents, announcements to this effect being accompanied by more determined resistance and increasing difficulty in obtaining orders.

Resistance to quotations representative of the market was the more pronounced from the fact a few buyers had managed to obtain fair sized lots of yarn—50,000 pounds and upward—at a cent or more below the market. For example, average quality 10s were reported having been sold in several instances for 26 cents. Good quality 30s single have been quoted at 35-36 cents, some business in what was described as ordinary yarns being taken at 33 cents. Double carded 30s were considered reasonably priced at 36.

Combed peeler yarns, although some weeks ago showing an approach to firmness, became wobbly during January, as indicated in the difference of one cent and more in quotations on pivotal counts. For instance, 30s single, quoted generally 40 cents, were let go at 39 cents, one lot, sold in vicious competition, fetching that price while some of those competing for the order had quoted a half to one cent more. While 44 cents seems to be the ruling price for 38s single combed peeler, business was taken at a cent less.

Despite the irregularity in prices and the deferred buyings for consumption, traders in carded and combed yarns believe that a fair amount of business will develop by early spring, and that some brisk buying will be witnessed. Manufacturers as a class are reported deferring the placing of orders, except to cover for known requirements. There seems to be hesitancy attributed in the trade to a feeling of uncertainty as to what will be coming out of Washington in the way of legislation, assured and prospective. While there seems no doubt that the economic situation is the prime reason for the present flat trade conditions in cotton yarns, yarn merchants feel that there is a limit to the time in which manufacturers may postpone their commitments. There has been in particular slack demand for dressgoods yarns. Business in this class has been coming with a rush and ending suddenly, and the season of 1935 seems to promise following tradition.

Exclusive of the business that is being offered by the hosiery industry, underwear manufacturers have been the more active buyers during recent months and appear to be at the beginning of a rather animated buying period. Those elements of the weaving industry consuming large quantities of yarn, ordinarily, have been taking very conservatively, this applying in particular to the carpet, upholstery and tapestry industries.

Mercerized yarns continued through January to command a fair amount of attention from hosiery mills, although it was stated by mercerizers that in view of the tendency to chiffons and the knee-high type of stocking, less cotton yarn is being used in the full-fashioned industry. Deliveries to underwear mills are described as relatively satisfactory. Prices have undergone practically no change, being represented still by quotations of 68 to 72 cents for 60s/2. Distribution is still in good volume, but new orders have been showing a decline in number and in quantity, according to some of the mercerizers.

Woolen and Worsted Yarns

Worsted yarns are showing a tendency to firmness after a wide disparity in quotations and considerable price competition. Manufacturers of men's wear piece goods are busier than for some time and consuming fair quantities of yarn, but as they covered during a period of severe competition just before the close of 1934, spinners report little new business in that quarter. Notwithstanding this drag, spinners are converging on a common price level, which may be ascribed to the fact they have determined to call a halt on selling at a loss.

The knitted outerwear trade has not yet been in the market for its requirements for the spring season, but inquiries in relation to prices for quantity lots supply an indication of business for them in the immediate forefront. Prices in this division of worsted yarns have been advanced slightly, as shown, for example, by present quotations of 85 to 87½ cents for 2/20s quarter blood for the sweater trade. This is an increase of 5 cents from the low quotation of several months ago. The bulk of the business passing in January was taken at 85 cents.

Probably the peak of activity in worsted yarn is seen in the hand-knitting group, in which distribution has materially increased, as compared to a year ago, more wool dealers and spinners engaging in the sale of hand knitting yarns on a large scale. Of course, January ordinarily is an active month in hand knitting yarns, as it is during that month women knitting their own garments in their homes start work on their sports toggery for Easter. The business in hand knitting yarn this year has assumed very great proportions.

Don't blind yourself to the vital importance of accurate pH control

The most important factor of wet finishing textiles is to obtain and maintain a correct pH value or caustic strength of the scouring solution. Of equal importance to the pH value is its *reserve* strength or ability to sustain its pH value as long as necessary to accomplish the work. Inaccurate pH control will surely cheapen the quality and salability of textile fabrics without lowering the cost of production.

Play safe with pH values. Perfect wet finishing can now be secured and costly errors in pH control can be practically eliminated with the use of DEPURATOR and NEUTRALITE. May we tell you the reasons for their great success?

DEPURATOR XX for Cotton

NEUTRALITE XX for Silk and Wool

NEUTRALITE XB for Heavily Oiled Rayon and Wool

DETERGENT PRODUCTS CORP.
ATLANTA, GA.
Columbia, S. C.—Texarkana, Ark.
Charlotte, N. C.—Buffalo, N. Y.

WHICH?

SOAP OR OIL for Degumming

Whichever you prefer, you can always be sure you have the right one when you choose a Laurel degumming agent. . . . Laurel Brand Pure Green Olive Soap has been kept to the highest standard for over a quarter of a century. Known for its purity and unvarying quality. . . . Laurel Silk Boil-off Oil meets the most exacting requirements. Traditional Laurel quality. Works in one- or two-bath process. . . . Why not try one of the efficient Laurel Degumming mediums and be sure of level dyeing?

LAUREL SOAP MFG. CO., INC.
WM. H. BERTOLET & SONS
2600 E. Tioga Street Philadelphia, Pa.

WAREHOUSES
Paterson, N. J. Charlotte, N. C. Chattanooga, Tenn.

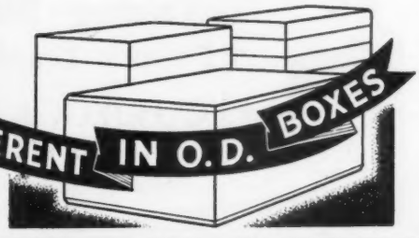
OLD DOMINION
PAPER BOXES

BEAUTY
STRENGTH
QUALITY
ARE INHERENT IN O.D. BOXES

BEAUTY, strength and quality are *built* into Old Dominion Paper Boxes—not "flossed up" with trick make-shift methods of construction. Many concerns in many industries have specified Old Dominion Boxes for years because they get an ideal combination of features so necessary in successful packaging. Old Dominion has complete facilities for manufacturing folding and set-up boxes in any volume you require.

Write nearest plant for samples, prices.

OLD DOMINION BOX CO., Inc.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C.
Asheboro, N. C. Charlotte, N. C.



P. Q. SILICATES
build profits

ARE YOU taking advantage of the savings that P. Q. Silicates of Soda can offer? Leading mills use them to improve the appearance and wearability of textiles and to reduce costs.

P. Q. Silicates have been known for over three-fourths of a century for safe, quick removal of oils, greases and dirt.

The uniform good quality of Star Brand Silicate and Metso Sodium Metasilicate save you time and money in kier boiling, bleaching and scouring. Try them.

PHILADELPHIA QUARTZ COMPANY
General Offices and Laboratory: 125 S. Third St., Philadelphia.
Chicago Sales Office: Engineering Bldg. Stocks in 60 cities.

PQ Reg. U. S. Pat. Off.

IMPROVE RESULTS - LOWER COSTS

SOLVAY PRODUCTS

TRADE MARK REG. U. S. PAT. OFF.

SOUTHERN DISTRIBUTORS:

Charles H. Stone, Charlotte, N. C.

Woodward Wight & Co., New Orleans, La.

J. T. Sudduth & Co., Birmingham, Ala.

Miller-Lenfestey Supply Co., Tampa, Miami, Jacksonville, Fla.

Burkart-Schier Chemical Co., Chattanooga, Tenn.

Paper Makers Chemical Corp., Atlanta, Ga.; Marrero, La.

CAUSTIC SODA
SOLID—GROUND—FLAKE
FOR
MERCERIZING

Solvay Caustic Soda is made from Soda Ash manufactured by the Solvay Process. The same high degree of technical supervision and the same scientific methods are exercised in producing Solvay Caustic Soda that are followed in making Solvay Soda Ash—the standard since 1881.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

61 BROADWAY NEW YORK

TO GIVE YOUR HOSIERY THAT "QUALITY" FINISH USE

Hydroxy Boil-Off Oils

We especially recommend our popular HYDROXY BOIL-OFF Oils of the hydroxol type which contains no silicate. They give your hosiery that fine appearance, so much desired. Hydroxy Oils are not severe in their action during the boiling process.

For boiling off hosiery made of Chardonet yarn we recommend the use of our RAYON SCOUR, A. and B. They are also preferred for boiling off underwear made of Chardonet (Tubize).

You will also find these Kali products of great value just now:

Hydroxy Slashing Compound "S", ideal for sizing Viscose yarns.

Hydroxy French Size is being widely used for sizing acetate warps.

The KALI Mfg. Co.
Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

BOSSON & LANE, INC.

Manufacturing Chemists
Established Jan. 1, 1895

Works and Office, Atlantic, Mass.

High Grade Castor Oil Products
Sulphonated-Saponified

Soluble Oil — Para Soap Oil
Turkey Red Oil — Castor Soap Oil
Soluble Pine Oil — B & L Bleaching Oil

PENTRALYN,
a superior assistant for Beam, Spool, Bobbin and Package Dyeing.

Bleach Softener CSO, Finishing Sizings and Softeners

VICTROLYN,
the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.

B & L Bleachers' Bluings and Violet Tints

GOOD MONEY VALUES -FREEDOM FROM WORRY

The most popular brush in the textile mills today

No. 163 COMBER

If you are not familiar with this brush, write for a free sample.

ATLANTA BRUSH CO.
Manufacturers -- Designers -- Repairers
ATLANTA, GA.

KENWOOD

KENWOOD WOOL PRODUCTS REG. U.S. PAT. OFF.

Tanned
Sanforizing Blankets
Palmer Blankets

F. C. HUYCK & SONS
KENWOOD MILLS
Albany, N. Y.

SPRAY YOUR COTTON WITH

MINEROL

BY THE

BRETON MINEROL PROCESS PATENTED

A system of conditioning cotton and other textile fibres by applying MINEROL as a lubricant additional to that which is natural to the fibre.

Why is it so many mills have adopted the BRETON MINEROL PROCESS?

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK

for LOW COST BLEACHING *of any fabric*

BECCO

CONCENTRATED HYDROGEN PEROXIDE

Hundreds of mills throughout the United States have made this up-to-date discovery: that *Becco* Concentrated Hydrogen Peroxide is a short-cut to superior bleached goods at lowest unit cost . . . *Becco* Technical Service is prepared to show your plant the way . . . Write for full details.

BECCO

BUFFALO ELECTRO-CHEMICAL CO.

BUFFALO, NEW YORK

Boston New York Philadelphia Chicago Charlotte Toronto Montreal

What will Sell in the 1935 market

THOSE textile products that will prove most profitable sellers in the 1935 market will be the ones that are more carefully processed and have a quality appearing finish. Look to your processing—it is more vital than ever in moving your sales curve upward. Remember that every HART PRODUCT is made under scientific supervision and control which guarantees the highest possible standard of uniformity. A constantly increasing number of the leading textile manufacturers are relying on HART PRODUCTS to reduce costs and improve the quality and appearance of their fabrics.

Ask for circulars on any or all HART products.

hart PRODUCTS BASED ON RESEARCH

Sulfonated Oils
Silk Soaking Oils
Rayon Oils
Backwinding Oils
Anti-Mildew Agents
Degumming Oils
Bleaching Oils
Dye Assistants
Wetting-out Agents
Kier Oils
Softeners
Finishing Oils
Rayon Sizings
Cotton Warp Dressing

THE HART PRODUCTS CORP.

Textile Processing Specialists

1440 BROADWAY NEW YORK, N. Y.

Weavers, everywhere, use and recommend

VICTOR

MILL STARCH

"THE WEAVER'S FRIEND"

THIN BOILING GREATER PENETRATION
CARRIES WEIGHT into THE FABRIC
100% PRODUCTION

Distributed By

DANIEL H. WALLACE SOUTHERN AGENT GREENVILLE, S. C.

C. B. ILER, GREENVILLE, S. C. F. M. WALLACE, COLUMBUS, GA.
L. J. CASTILE, CHARLOTTE, N. C.

Manufactured by

THE KEEVER STARCH CO., COLUMBUS, OHIO

GENERAL PURPOSE SLITTER

CAMERON MACHINE COMPANY
61 Poplar St. BROOKLYN, N.Y.

NO. 60 BOBBIN BRUSH
Wire twisted with wooden handle made to fit any size bobbin. Brush part 6½ inches long, 2 inches diameter.

They're Swinging To

GASTONIA

for Textile Brushes

because every mill man who has once used a GASTONIA Brush knows it can be depended upon for scientific design and lasting qualities. They're better brushes but they cost no more than others. Ask for descriptive booklet and prices.

GASTONIA BRUSH CO., GASTONIA, N. C.

Manufacturers--Designers-Repairers of Textile Mill Brushes

There is Nothing Like

REG. U. S. PAT. OFF.

CALF

for Roller Covering

R. NEUMANN & CO.

Hoboken, N. J.

HARRIS
SPASE-RITE REEDS

Regular repeat orders from a constantly growing number of leading Southern mills are proof of the service being secured from HARRIS SPASE-RITE REEDS.

Our extensive experience enables us to manufacture reeds of superior workmanship and material, designed to meet the individual requirements of your mill.

Harris Manufacturing Co.
207 WALKER ST., ATLANTA, GA.

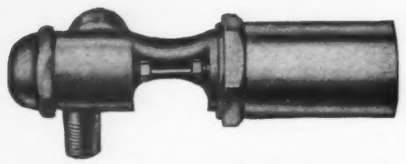
SHOWS the WAY

ABBOTT MACHINE CO.
WILTON, N. H.

An Inefficient Head Means WASTE

A humidifier head that won't maintain full capacity without constant attention not only wastes horsepower, time and labor, but fails to humidify properly which results in other wastes. Many mills are replacing old heads with the

JACKSON



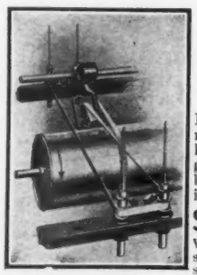
Automatic **ATOMIZERS**

which will never clog—they automatically clean every time the system shuts off, maintaining FULL capacity without attention. All parts are non-corrosive. It is simple, non-adjustable, dependable. Can be connected to any system using 30 lb. air pressure, gravity water supply.

Write for full details. Quotations on revamping or complete installations gladly furnished.

JACKSON MOISTENING CO., INC.
533 Bedford St. Fall River, Mass.
Southern Representative:
G. A. White & Co., P. O. Box 533, Charlotte, N. C.

"Send it to Gastonia!"



for ECONOMICAL REPAIR SERVICE

If you wish to save much on the cost of new parts and time and delay in shipment, have your equipment repaired or rebuilt as good as new in an up-to-date equipped plant by experienced textile experts—just "Send it to Gastonia."

SPINNING CYLINDERS

We are fully equipped to make new or repair spinning cylinders as good as new, at a great saving to you.

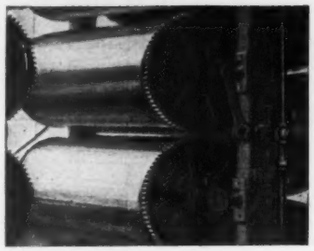
CARD SCREENS

The rebuilding of card screens is one of our specialties. We have a complete stock of parts for all makes of card screens as well as picker screens.

DRYING CANS

Just send your cans to Gastonia and you will receive them back in perfect condition quicker and at a saving.

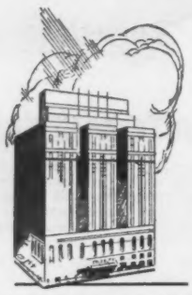
You take no chances on Gastonia Service. Every job is guaranteed and quick service is assured. Write for full information today.



GASTONIA TEXTILE SHEET METAL WORKS INC.
222 E. LONG STREET
GASTONIA, N. C.
CONVEYOR SYSTEMS — GENERAL SHEET METAL WORK

Diastafor Department
STANDARD BRANDS INCORPORATED
595 Madison Ave., New York, N.Y.

...HAVE YOU HEARD *the one about the traveling salesman?*



He went to bed at the William Penn and slept twenty years! Well, maybe that is a little exaggerated. But anyway, the beds at Pittsburgh's number one hotel are so comfortable you don't ever want to get up. The food in the four famous restaurants is equally exceptional, and the prices reasonable. Quiet, well-furnished rooms, $3.50 single; $5.00 double, all with bath.

1600 ROOMS . 1600 BATHS

HOTEL WILLIAM PENN

PITTSBURGH, PENNA.

TRADITION

Since Lincoln's time, one out of every three Presidents has resided at the Willard . . . The modern Willard occupies the same site. Its exclusiveness, exceptional accommodations, and luxurious appointments attract today's celebrities and the experienced traveler.

Single Rooms with Bath $4 up
Double Rooms with Bath $6 up

Moderate Prices in Main Dining Room—Popular Price Coffee Shop

The **WILLARD HOTEL**

"Residence of Presidents"

WASHINGTON, D. C.

H. P. Somerville, Managing Director

THE AUDIT BUREAU OF CIRCULATIONS

And Advertising Terms

The Audit Bureau of Circulations is the cutting edge of the "Truth in Circulation" movement.

Today, nearly fifteen hundred publications of every type, published in the United States and Canada, make detailed semi - annual statements through the A. B. C. as to the size of their circulations, where they distribute their copies and how they build up and maintain their subscription lists. Every year, the traveling auditors of the Bureau visit these publications and examine and report on the accuracy of their circulation claims.

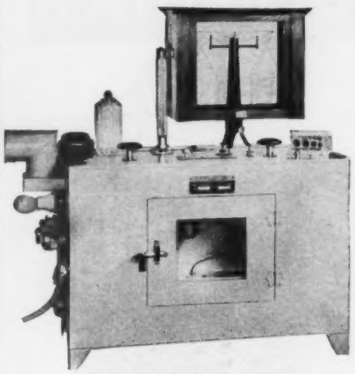
One of the most important contributions, if not the most important, which the A. B. C. had made to the intelligent sale and purchase of advertising space is the establishment of a uniform language for buyer and seller to use. Before the A. B. C. was founded, few advertising terms were used and understood in the same way by everybody. "Net paid circulation," for instance, meant ten or eleven different things. The A. B. C. has given definite meanings to words and terms. When an advertiser is comparing a number of different publications, he knows that the same word used in the report of one publication means exactly the same thing in the reports of the others.

Fair trading without standardized terms is an obvious impossibility. Because the Audit Bureau of Circulations has given advertising terms unequivocal definitions, advertisers are today able to transact business with publications, free from the dangers of misunderstanding and of being misunderstood.

Cotton

Grant Bldg. Atlanta, Ga.

EMERSON
TEXTILE CONDITIONING OVENS



EIGHT BASKET OVEN
Baskets 3" x 3" x 6" deep.

Our various types of ovens are used extensively for determining the moisture in Wool, Cotton, Silk or Rayon, both raw materials and materials in process.

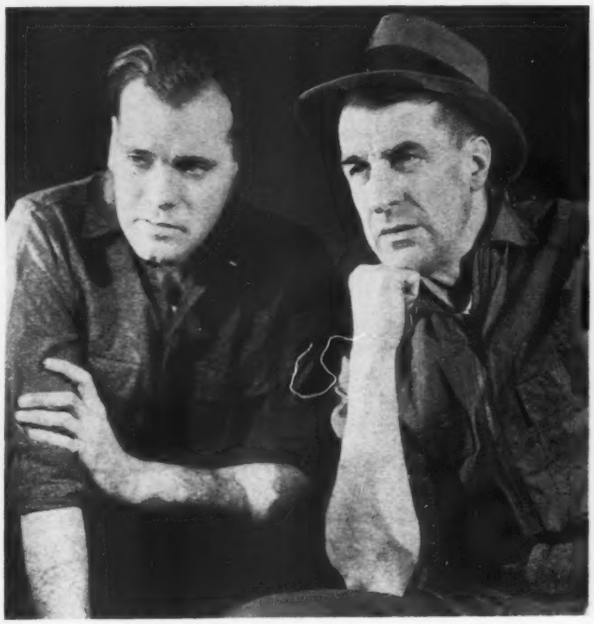
For different branches of the Textile Industry we make different types of Conditioning Ovens equipped with baskets to fit the work, whether bulky samples of wool, cotton, or silk, or small samples of fine yarn.

for Conditioning Oven Information Write to

EMERSON APPARATUS CO. 174 Tremont St. MELROSE, MASS.

YOU are assured the highest *quality* and *uniformity* by specifying ATLANTA for harness, reeds, frames and heddles.

ATLANTA
HARNESS - REEDS
FRAMES - HEDDLES
ATLANTA HARNESS & REED MFG. CO.
ATLANTA, GEORGIA



"They expect us to show twisting costs as low as Harry's mill—and him with Eadie Rings!"

Mills twisting cotton, as well as rayon, find they are able to step up production substantially after installing Eadie Auto-lubricated Rings. Woolen mills also report increased production without loss of quality.

With these rings it is possible to make a larger package with excellent running conditions and no undue strain on the yarn. Why not let your Super and Overseer try a frame of DIAMOND FINISH Eadie Rings?

WHITINSVILLE (MASS.) SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873
DIAMOND FINISH

Southern Representative: WALTER L. NICHOLSON, 2119 Coniston Place, Charlotte
Mid-West Representative: ALBERT R. BREEN, 2650 Coyne Street, Chicago

The Textile Men Have

"SIZED"

Us Up And Agree We Are

O. K.

It is the pleasure of the Atlanta Biltmore to list among its visitors many textile men whose approval is best shown in their repeated visits here. They like the Biltmore, because comfort and relaxation, above all things, is assured.

The Biltmore is on the cross-roads of travel.

The Biltmore is close to the business district yet removed from the noise.

The Biltmore has 600 outside rooms, with bath, circulating ice water.

The Biltmore has one-day laundry service at no extra cost.

The Biltmore's food is unexcelled.

RATES:
- $3 $4 $5 — Single
- $4.50 $5.50 $6.50 — Two persons to room, double bed.
- $5 $6 $7 — Two persons to room, twin beds

MEALS:
- Breakfast, from 35c.
- Luncheon, from 75c.
- Dinner, from $1.00.

ATLANTA BILTMORE

"The South's Supreme Hotel"

COMING TO PHILADELPHIA?

A SYMBOL

HOTEL PENNSYLVANIA PHILADELPHIA

OF HOSPITALITY

When you visit Philadelphia make **HOTEL PENNSYLVANIA** your home . . . You will find its location convenient—ten minutes to the business section . . . away from congestion and noise. . . . Known the world over for its hospitality . . . food that satisfies.

600 ROOMS, Each With Bath
From $2.50 Single, $4.00 Double

HOTEL PENNSYLVANIA

39th and CHESTNUT STREETS
PHILADELPHIA

THE DAVID BROWN COMPANY

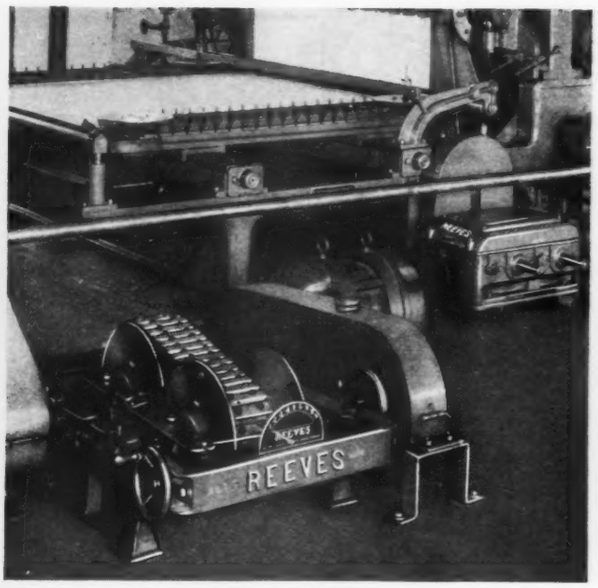
FOUNDED 1883

MANUFACTURERS OF
"HIGH GRADE"
BOBBINS, SPOOLS, ROLLS, CONES, SKEWERS AND SHUTTLES
OF EVERY DESCRIPTION
FOR TEXTILE MILLS

SOUTHERN REPRESENTATIVES:

Ralph Gossett, Wm. J. Moore, 904 Woodside Bldg., Greenville, S. C.
Bolton C. Plowden, Griffin, Ga.
Russell A. Singleton, Dallas, Tex.
Gastonia Mill Supply Co., Gastonia, N. C.
James Supply Co., Chattanooga, Tenn.
S. F. Jones, R. A. Brand, 212 Johnston Bldg., Charlotte, N. C.
J. R. Plowden, Birmingham, Ala.

MAIN FACTORY AND GENERAL OFFICES
LAWRENCE, MASS.



Above—Two REEVES Transmissions applied to Sanforizing Machine. REEVES Horizontal Open Design, at left, drives entire range—consisting of palmer, tenterett and nip rolls. REEVES Horizontal Enclosed Design, at right, synchronizes speed between tenterett and palmer.

TIME-TESTED
SPEED CONTROL

DURING 38 years of exacting service in the textile industry, the REEVES Variable Speed Transmission has become the *rule* for securing *infinite, accurate speed regulation*. . . . More machine builders provide the REEVES as standard equipment—and more plant managers specify the REEVES for modernizing machines in service—than any other speed control unit. . . . The REEVES Transmission gives *any* speed instantly and accurately. It positively *holds* any speed setting as long as desired. Remarkably compact and easy to install. Any type of control—manual, electric-remote, entirely automatic. Complete line of sizes, designs, speed ranges. . . . For specific facts on any type application, write the REEVES engineers. Send coupon below for catalog—a valuable reference book on speed regulation.

★ REEVES ★
Variable Speed TRANSMISSION

REEVES PULLEY CO., Columbus, Indiana
Please send copy of Catalog T-99. (2-35)

Name .....
Company .....
Address .....

REVOLUTIONARY ADVANCE IN COTTON CARD GRINDING

The new Roy Solid Grinding Wheel Cotton Traverse Card Grinder is accomplishing remarkable results. A perfect grinding job, with light grinding and higher speeds. Let us give you the proof of better and more economical grinding.

B. S. ROY & SON COMPANY
WORCESTER, MASS.

Arguto NON-METALLIC

20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial

ARGUTO OILLESS BEARING CO.
Wayne Junction, Philadelphia, Pa.

Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.

Ralph E. Loper Co.
INDUSTRIAL ENGINEERS
Specialists in Textile Costs Over 22 Years
FALL RIVER, MASS. GREENVILLE, S. C.

HURLEY-JOHNSON CORP.
25 WALKER ST., NEW YORK
SOLE AMERICAN AGENTS FOR
JAMES KENYON & SON, LTD.
BURY, LANCASHIRE, ENGLAND
Celebrated
LAPPINGS and BLANKETS for PRINTING MACHINES
CLEARER, ROLLER and SLASHER CLOTHS.
For Best results in Sanforizing use
KENYON'S ENDLESS WOOLEN BLANKETS

Makes* SCRUBBING *Cheaper Than Mopping

The double-duty FINNELL in one operation scrubs loose all grit, grease and oil—picks up the dirty water. Scrubs in less time and with smaller crew than it takes to mop. For demonstration or information write FINNELL SYSTEM, INC., 1302 East Street, Elkhart, Indiana.

FINNELL
EST. 1906
ELECTRIC FLOOR SCRUBBER—POLISHER

TRADING POST EXCHANGE

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

Wanted — a Product to Manufacture

One of our clients, a New England manufacturer with a sales organization contacting textile mills throughout the world, desires to manufacture and sell accessory of merit, preferably covered by strong patents, and applicable to existing looms or other textile machinery. Strictest confidence observed.

William L. Fletcher, Inc.
8 Newbury Street,
Boston

BETTER TEXTILE MACHINERY AT A GREATER SAVING

With 25 years experience with largest textile machinery builders, designing, engineering and selling—with knowledge of how to secure machinery at the greatest savings and how to save time and expense in shipping—We are able to render our clients a service they cannot secure elsewhere. Tell us what you want.

GEORGE F. LANGEVIN, 20-22 Howe Bldg., LOWELL, MASS.
Specializing in Textile Machinery for Relocation.

LEON KIMMEL MACHINERY COMPANY

SELECTED TEXTILE MACHINERY
LIQUIDATIONS *APPRAISALS*

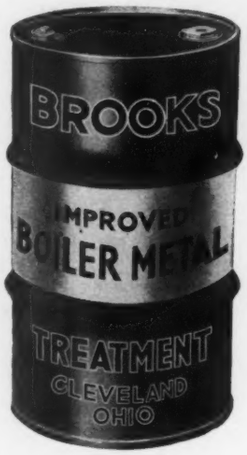
405 BONA ALLEN BLDG.
ATLANTA, GEORGIA
Phone Walnut 1614

Paul B. Eaton
PATENT LAWYER
1408 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
Former Member Examining Corps
U. S. Patent Office

POSITION WANTED

Young man, age 36, married, formerly Overseer Weaving, would like Weaving Overseer Position in small cotton mill in the South of about 400 to 600 Draper Looms on plain work. At present employed as Draper Loom Fixer. 20 years' experience on Draper Looms, as a Weaver and Loom Fixer, and Boss Weaver. Strictly sober man; never been in any labor unions, steady, honest worker; have good references. Box 133, c/o COTTON, 1020 Grant Bldg., Atlanta, Ga.

There Never Has Been A Safer, Surer Way To Clean a Boiler



NOW more than ever, engineers are being called upon to contribute a large proportion of the economies affected in the textile mill.

In many mills the use of Brooks Improved Boiler Metal Treatment has resulted in savings of 15 to 50% in fuel consumption and thousands of dollars worth of needless repairs and lost time.

There never has been a safer, more economical sure way of cleaning a boiler and eliminating repairs due to scale, pitting and corrosion than the proper use of Brooks Improved Boiler Metal Treatment. Furthermore, it has no effect on the steam and interferes in no way with processing operation using live steam. Write us today for details of our 60-day trial offer.

BROOKS OIL CO.
Cleveland,
Ohio

WASTE BELT HOOKS

Are costing you plenty — unless you are using

Safety
REG. U.S. PAT. OFF.
BELT HOOKS
WITH THE STEEL BINDER BARS

INVESTIGATE
It will pay you
ASK YOUR JOBBER

Write For
"ASKS ALL—TELLS ALL"
An Illuminating Questionnaire

SAFETY BELT LACER CO.
Factories Bldg. Toledo, Ohio

AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

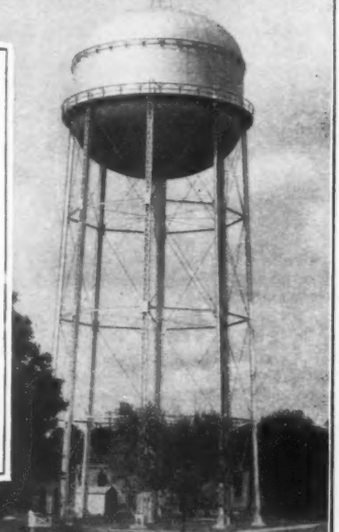
We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

Write us and let us quote you on anything from a postal card to a full bound book.

The A. J. Showalter Co.
PRINTERS AND PUBLISHERS
DALTON GEORGIA

COLE
TANKS *and* TOWERS



COLE'S reputation for correct design and construction is known all over the country. Our engineering department, with many years of experience, will be glad to submit designs to meet any requirement for

TANKS TOWERS
BOILERS KIERS
STAND PIPES
SMOKE STACKS
ACID TANKS
VATS
STORAGE BINS
KETTLES
ETC.

D. COLE MANUFACTURING CO.
NEWNAN *EST. 1854* GEORGIA
FABRICATORS OF STEEL AND ALLOY STEEL PLATE

Advertisers' Index

A

Aberfoyle Mfg. Co. 138
Abbott Machine Co. 155
Acme Steel Co. 20
Aldrich Machine Works 6
Alemite Corp. 37
Alexander Brothers, Inc. 21
Allis-Chalmers Mfg. Co. 29
American Obermaier Corp. 34
Arguto Oilless Bearing Co. ...160
Arkansas Co., Inc. 22
Armstrong Cork & Insulation Co. 83
Arnold, Hoffman & Co., Inc.... 46
Atlanta Biltmore Hotel 158
Atlanta Brush Co. 152
Atlanta Envelope Co. 99
Atlanta Harness & Reed Mfg. Co. 157

B

Barber-Colman Co. 105
Boger & Crawford 142
Borne Scrymser Co. 153
Bosson & Lane, Inc. 152
Brinton Co., H. 145
Bristol Co. ..... *
Brooks Oil Co. 161
Brown Co., David 159
Buffalo Electro - Chemical Co., Inc. 153
Butterworth & Sons Co., H. W. ..... *

C

Cameron Machine Co. 154
Campbell & Co., John ..... *
Centrif-Air Machine Co., Inc. . 17
Champion Fibre Co. 42
Ciba Co. ..... *
Clinton Co. 110
Cole Mfg. Co., R. D. 161
Corn Products Refining Co. .. *
Crane Company 32
Crucible Steel Co. of America. 43
Cyclone Fence Co. 99

D

Dayton Rubber Mfg. Co. 49
Detergent Products Corp. 151
Dixie Mercerizing Co. ..... *
Draper Corporation 1
Dronsfield Bros., Ltd. ..... *
Dupont de Nemours & Co., Inc., E. I., Dyestuffs Division.... 45
Dupont de Nemours & Co., Inc., E. I., Paint and Varnish Division 31
Durant Mfg. Co. 116

E

Eaton, Paul B. 160
Emerson Apparatus Co. 157
Emmons Loom Harness Co. ...119

F

Fafnir Bearing Co. 30
Fidelity Machine Co. 144
Finnell System, Inc. 160
Fletcher, Wm. L. 160
Foster Machine Co. 10
Foxboro Co. 108
Franklin Process Co. ....Inside Front Cover

G

Gaston County Dyeing Mch. Co. 95
Gastonia Brush Co. 154
Gastonia Sheet Metal Works, Inc. 155
Gates Rubber Co. 24
General Dyestuff Corp. ..... *
General Electric Co. 93
General Electric, Nela Park .. 16
General Electric Vapor Lamp Co. ..... *
Goldens Foundry & Mch. Co...101
Goodrich Rubber Co., B. F.... .....90 and 91
Goodyear Tire & Rubber Co. .. 79
Grasselli Chemical Co., Inc. .. 48
Gulf Refining Co. 39

H

H. & B. American Machine Co.. 87
Harris Mfg. Co. 154
Hart Products Corp. 153
Henderson Fdry. & Mach. Works 26
Hermas Machine Co. 101
Hinde & Dauch Paper Co. ...116
Hotel Atlanta Biltmore 158
Hotel Pennsylvania 158
Hotel Miami Biltmore ..... *
Hotel Vanderbilt 44
Hotel William Penn 156
Hotel Willard 156
Houghton & Co., E. F. ..... *
Howard Bros. Mfg. Co. 9
Hurley-Johnson Corp. 160
Huyck & Sons, F. C. 152
Hyatt Roller Bearing Co. 23

I

Industrial Dryer Corp. ..... *
Industrial Rayon Corp. 54
International Nickel Co., Inc. . 36

J

Jackson Moistening Co., Inc...155
Jacobs Graphic Arts Co. 40
Johnson Bronze Co. 118
Johnson, Chas. B. ...Front Cover
Johnson Service Co. 27

K

Kali Mfg. Co. 152
Kaumagraph Co. 132
Keever Starch Co. 154
Kimmel Machinery Co., Leon..160

L

Langevin, George F. 160
Laurel Soap Mfg. Co. 151
Lawrence Leather Co., A. C...106
Link Belt Co. 15
Loper Co., Ralph E. 160

M

Manhattan Rubber Mfg. Co. Division 41
Merrow Machine Co. 110
Moccasin Bushing Co. 144
Morehead Mfg. Co. 114

N

Neumann & Co., R. 154
New York & New Jersey Lubricant Co. 120
North, Inc., Frank G. 118

O

Old Dominion Box Co. 151
Onyx Oil & Chemical Co. 28

P

Permutit Co. 14
Phila. Felt Co. 120
Phila. Quartz Co. 151
Power Transmission Council... 52
Powers Regulator Co. ..... *
Proctor & Schwartz, Inc. 118

Q

Quissett Mills 144

R

Railway Express Agency, Inc..114
Reeves Pulley Co. 159
Reliance Electric & Eng'g. Co.. *
Republic Rubber Co. 47
Republic Steel Corp. 50
Rhoads & Sons, J. E. 34
Robert & Company 3
Rockwood Mfg. Co. 38
Rohm & Haas Co., Inc. ..... *
Roy & Son Co., B. S. 159
Royce Chemical Co....Back Cover
Royersford Needle Works, Inc..136

S

Saco-Lowell Shops 85
Safety Belt Lacer Co. 160
Sargent's Sons Corp., C. G. .. 19
Scholler Bros., Inc. 148
Schieren Co., Chas. A. 116
Scott & Williams, Inc. 123
Seydel-Wooley Co. 110
Sherwin-Williams Co. ..... *
Showalter Printing Co., A. J...161
S. K. F. Industries, Inc. 97
Skybryte Co. 103
Solvay Sales Corp. 152
Sonoco Products Co. 11
Standard Brands, Inc. 155
Standard, Coosa, Thatcher Co..148
Standard Oil Co. of Ky. 25
Standard Trump Bros. Mch. Co. 124
Steel Heddle Mfg. Co. 115
Stein, Hall & Co., Inc. ..... *
Stewart Iron Works Co., Inc..114

T

Tagliabue Mfg. Co., C. J. 120
Taylor Instrument Companies, Inc. 35
Terrell Machine Co., Inc. 117
Texas Co. 2
Textile Banking Co. 121
Textile Machine Works 134
Three-In-One Oil Co. 113
Toledo Scale Co. ..... *
Torrington Co. .....129 and 130

U

Union Special Machine Co. ... 89
Universal Winding Co. 7
U S Bobbin & Shuttle Co. 4
U. S. Gutta Percha Paint Co.. 33
U. S. Ring Traveler Co. 8
U. S. Rubber Co. 18

V

Veeder-Root, Inc. ....Inside Back Cover

W

Wak, Inc. 110
Wallerstein Co., Inc. 13
Want Ads 160
Waterman, Currier & Co., Inc..148
West Point Foundry & Mch. Co. 12
Whitin Machine Works 5
Whitinsville Spinning Ring Co.157
Wildman Mfg. Co. 126
Willcox & Gibbs Sewing Machine Co. ..... *
Wolf & Co., Jacques ..... *

Veeder-Root PICK COUNTERS CAN'T BE MATCHED

BECAUSE OF THESE 14 FEATURES

These 14 Veeder-Root features are the differences that make "all the difference in the world" in pick counter performance and economy. Veeder-Root engineers know *from experience* where special materials are required and which parts must have extremely close tolerances. They have developed special machines and processes to secure uniform quality and accuracy . . . perfected many other points of design and construction which are summed up in these 14 features.

For 56 years Veeder-Root engineers have been building counters. Twenty-eight years ago they designed, built and installed the world's *first* pick counters. Guided by the information and data accumulated during these years, Veeder-Root engineers have originated every important development and improvement in pick counters—until today, there are 14 reasons why Veeder-Root Pick Counters are the best it is possible to buy.

Have a Veeder-Root representative call and show you these 14 features found only in Veeder-Root Pick Counters. It will be self-evident then why Veeder-Root has built and installed over 400,000 pick counters on looms throughout the world—and why Veeder-Root can back its pick counters with a five-year written guarantee.

VEEDER-ROOT INC.

HARTFORD, CONN. GREENVILLE, S. C.

BOSTON PHILADELPHIA MONTREAL LONDON

BUILDERS OF COUNTING DEVICES SINCE 1878

1491

Call in Your Help..

BETTER WORK is WANTED!

Gather about you the *ideal* assistants to an outstanding FINISH — materials for finishing that will point you at the head of your trade.

DISCOLITE—For discharge printing. Will improve the quality of workmanship in any plant because:

- It runs smoothly
- Is easily soluble
- Uniform concentration
- Crystal clear in solution

VELV-O-RAY—To step up the quality of your finish. Special variations for special purposes.

- Velv-O-ray P.—for cottons
- Velv-O-ray 1.—for silks and rayons
- Velv-O-ray A. T. for silks—pure dye or weighted
- Velv-O-ray C.L. for Acetates

VATROLITE—The Standard of the Trade in Sodium Hydrosulphite for stripping. An essential to Vat Color dyeing—with Purity — Efficiency — Uniformity.

RAYON CREPE SOFTENER — Offers a specialized treatment for practically all synthetic fibres. Satisfies the trade requirements for a soft, drapey hand. Without stickiness—free from odor.

ARATEX N. S.—A convenient, ready-to-use thickener for textile printing. Of high viscosity—yet free-flowing. Prints sharply—easily removed by a cold water wash. Leaves no stain. The Perfect Gum for silk printing.

SULPHONATED CASTOR OILS

Of all types for your requirements. Turkey Red Oils • Royce Special Oil Super Sulphon Oil • All standard productions, assuring the highest degree in sulphonation—produced by the most modern appliances.

ROYCE CHEMICAL COMPANY

Chemical Manufacturers

CARLTON HILL, NEW JERSEY

NEW ENGLAND REPRESENTATIVES: RICHARD HAWORTH, 28 FOUNTAIN ST., PROVIDENCE, R. I.